JAN LEWIS ON CD-ROM

FREE

California's Computer Magazine

JUNE 1987 • ISSUE 32

MICROTIMES™

LOTUS 1-2-3

THE CONSORTIUM
Building The Lotus Aftermarket

LOTUS FREELANCE PLUS
Graphics From Your Spreadsheet Files

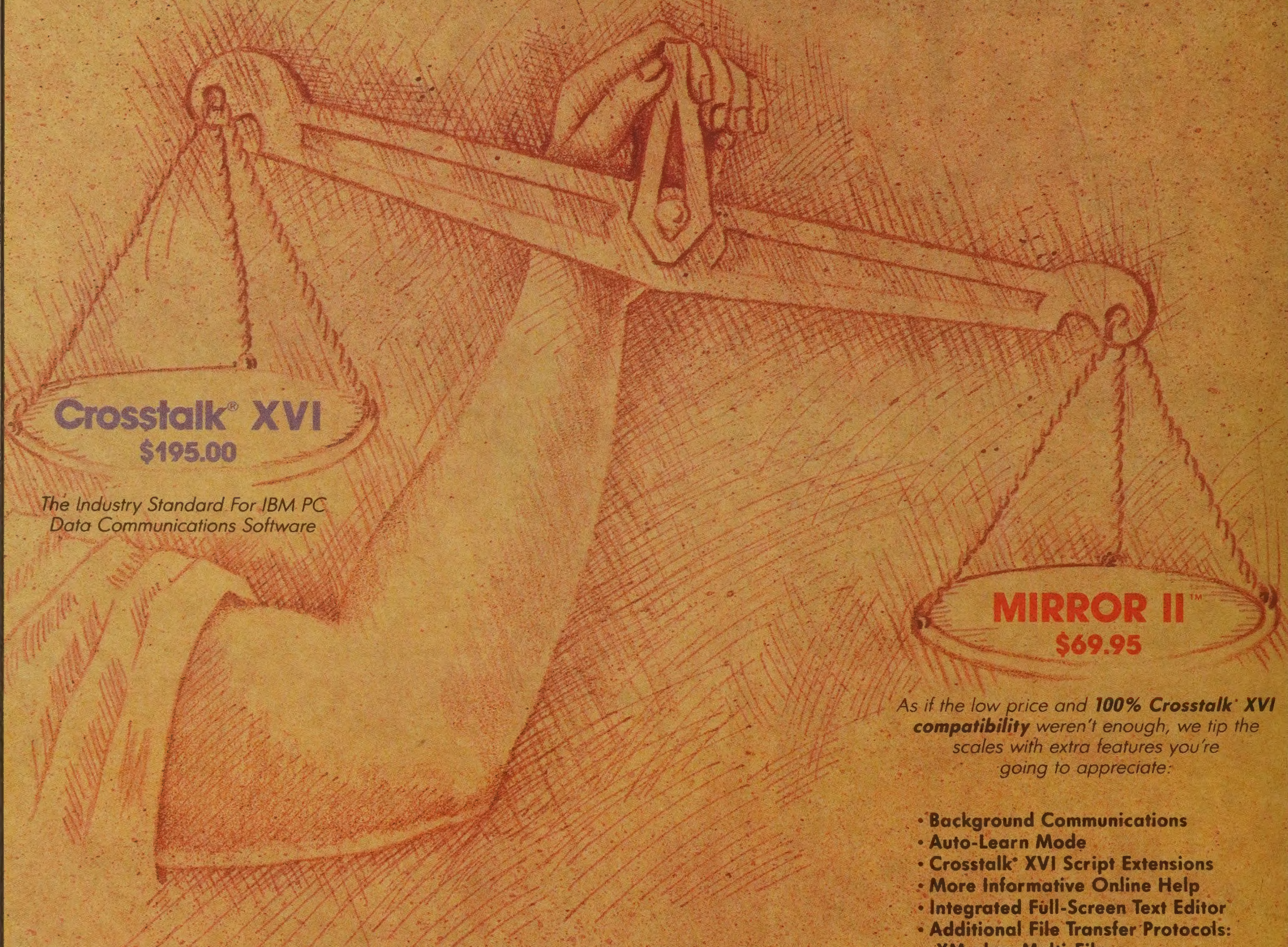
SPREADSHEET PITFALLS
How To Avoid Them

SPECIAL

Rick Gibson
Of The Consortium

MIRROR II™ the Crosstalk® SuperKlone™

You can pay more for Crosstalk® XVI and get less, or you can pay less for MIRROR II™ and get more.



The Industry Standard For IBM PC Data Communications Software

*As if the low price and **100% Crosstalk® XVI compatibility** weren't enough, we tip the scales with extra features you're going to appreciate:*

- **Background Communications**
- **Auto-Learn Mode**
- **Crosstalk® XVI Script Extensions**
- **More Informative Online Help**
- **Integrated Full-Screen Text Editor**
- **Additional File Transfer Protocols: XModem Multi-File, Hayes Smartcom II and YModem**
- **Additional Terminal Emulations**
- **Better Password / Security Protection**
- **Transaction / Activity Log**
- **Site Licensing**

When You Weigh the Evidence, The Decision is Clear!

BYTE
April 1986
Ezra Shapiro

"I've deleted my Crosstalk files and plugged in Mirror, and I'm not the sort of person who throws out trusted software without good cause. I've got to have proof, and here it is."

Government Computer News
July 18, 1986
P. L. Olympia

"It is a singular pleasure to review a product such as this **[Mirror]**. All PC users who need to communicate with another computer should buy it."

PC Products
August 1986
Michael D. Millikin

[Mirror] "A Crosstalk twin that is complemented by a lower price tag, better documentation, and a respect for hard disks."

MIRROR II™
A Better Reflection

To order call: (904) 878-8564 VISA MC COD
Shipping/Handling $5.00 (COD add $3.00)
Overseas Orders $18.00
Florida Residents add 5% Sales Tax

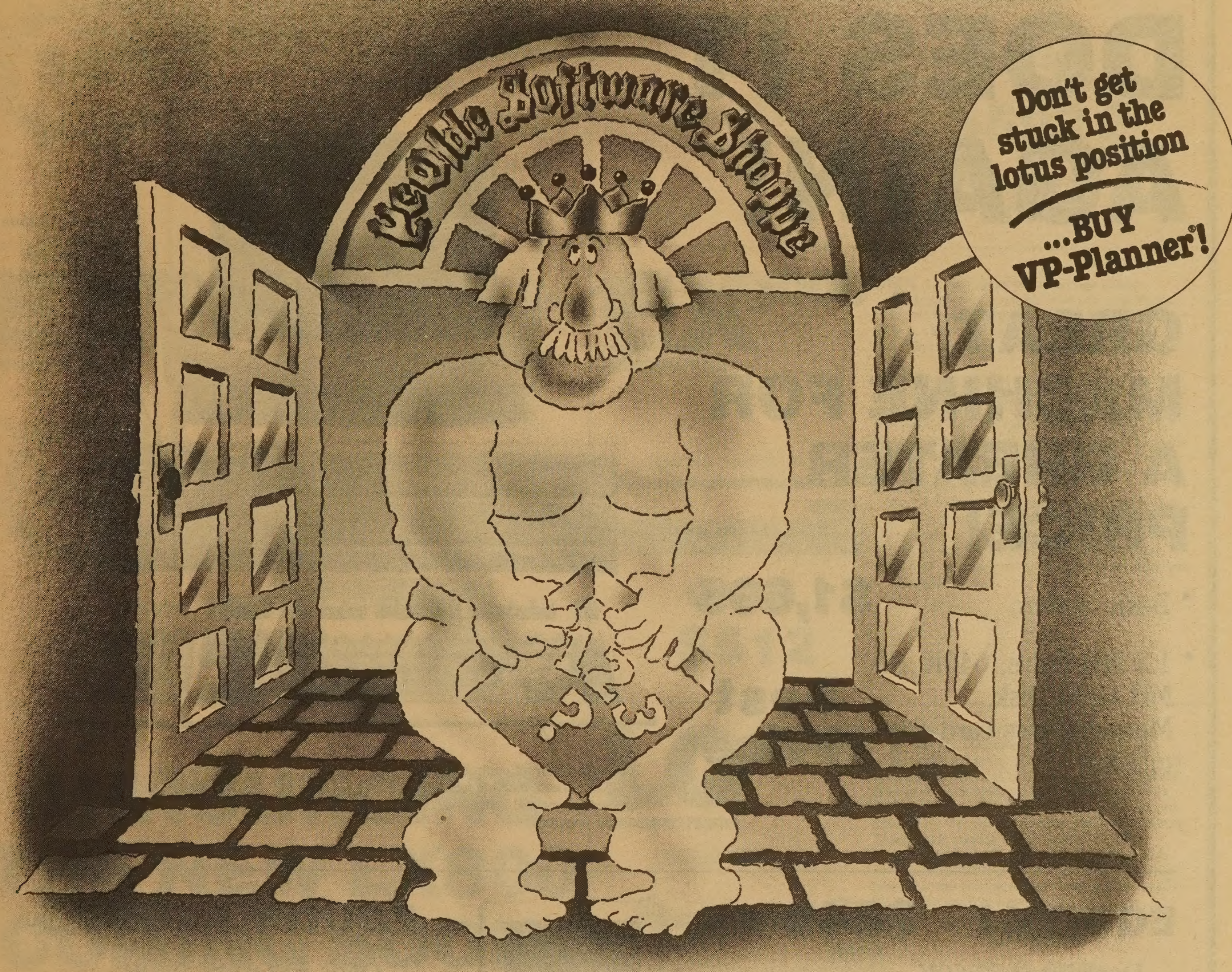
$69.95
60-DAY MONEY-BACK GUARANTEE

MIRROR II is available for the IBM PC/XT/AT and 100% Compatibles and requires MS-DOS 2.0 or Higher.

Crosstalk is a registered trademark of Digital Communications Associates Inc./Hayes is a registered trademark of Hayes Microcomputer Products, Inc./MIRROR II, SoftKlone and SuperKlone are trademarks of SoftKlone Distributing Corporation.

SOFTKLONE™
336 Office Plaza Dr.
Tallahassee, FL 32301 • (904) 878-8564
Telex: 6714280 KLON

The Tale of the Emperor's Spreadsheet



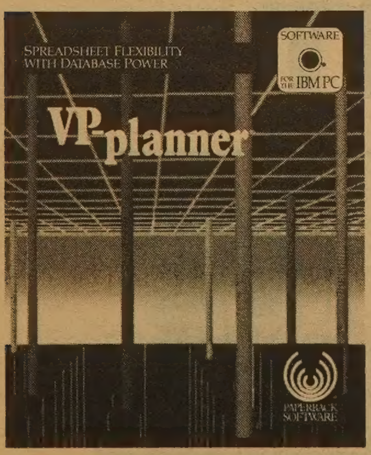
You can't hide the truth. The emperor's tailors want you to think their expensive software is the finest money can buy. But before you expose yourself, take a closer look at the bottom line on *VP-Planner.*

VP-Planner is a spreadsheet program that is keystroke-, file-, and macro-compatible with the emperor's spreadsheet . . . yet costs only one fifth as much. Compatibility means you can use existing templates, tutorials, and training materials. Plus *VP-Planner* covers a lot of areas that the emperor's tailors ignored.

For example, *VP-Planner* has a seamless and flexible connection with external database files. This allows you to manage larger worksheet tasks in less time, using less disk space. And the unique Multidimensional Database™ feature eliminates tedious worksheet linking.

A handy Autokey™ feature lets you capture keystrokes and turn them into macros . . . and much, much more. Non-copy-protected backup disk and corporate licenses available.

See for yourself.
The best does cost less.
$99^95



VP-Planner.®
A GREAT DEAL more.

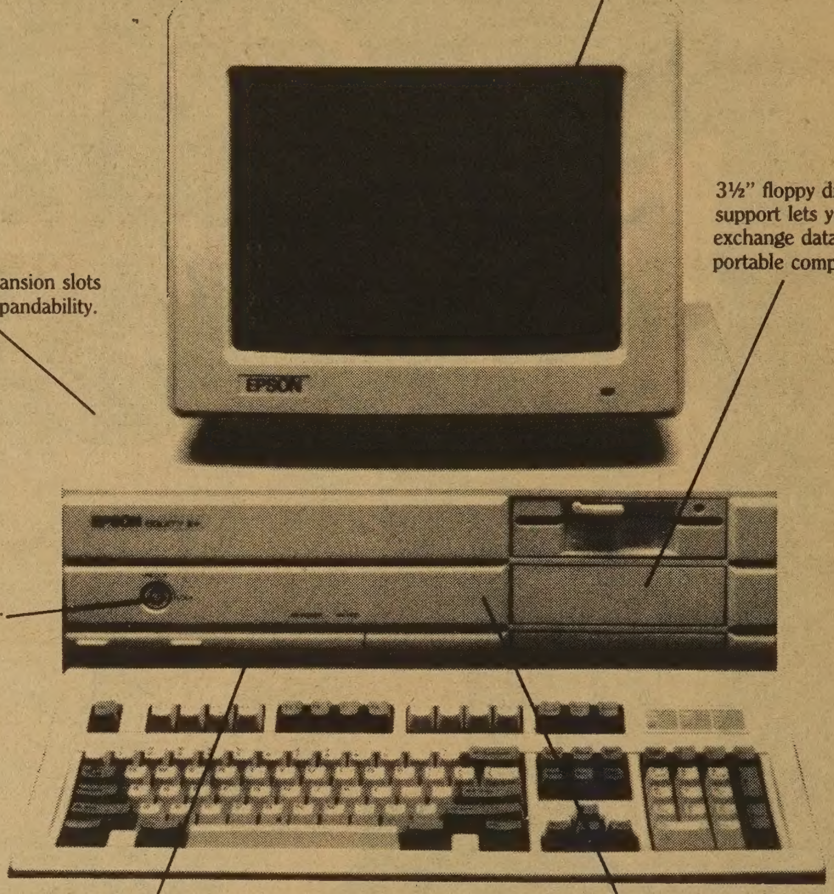
Software for the IBM®PC from Paperback Software.
2830 Ninth Street, Berkeley, California 94710 Phone (415) 644-2116

PAPERBACK SOFTWARE

VP-Planner and Paperback Software are registered trademarks and Autokey and Multidimensional Database are trademarks of Paperback Software International. 1-2-3 is a registered trademark of Lotus Development Corp. IBM is a registered trademark of International Business Machines Corp. ©1987 Paperback Software International.

EPSON DOES IT AGAIN!

EPSON
EQUITY III+



Optional high resolution monochrome. CGA or EGA monitors available.

3½" floppy disk drive support lets you exchange data with portable computers.

Nine full-size expansion slots offer optimum expandability.

Security keylock.

As easy-to-use front control panel puts CPU speed, monitor selection, speaker volume and system reset at your fingertips.

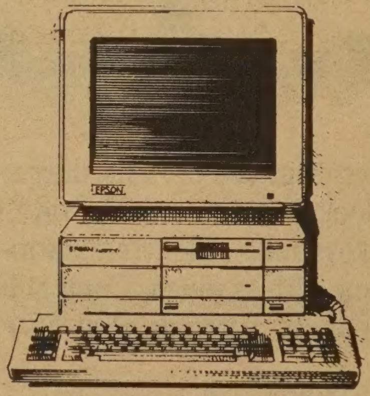
80287-8 math co-processor support.

GREAT MACHINE FOR A GREATER PRICE!

* Basic System	**$1,695**
* 1.2 MB Drive, 640K, 30 MB Hard Disk, Monographics card & monitor	**Best Price**

EQUITY I $649

Dual Floppy 360K
MS DOS/GW-BASIC
MONO CARD + MONITOR
PARALLEL/SERIAL



EPSON
EQUITY I

EQUITY I $975

ONE FLOPPY 360K
20 MB HARD DISK
MS DOS/GW-BASIC
MONO CARD + MONITOR

BAY AREA COMPUTERS

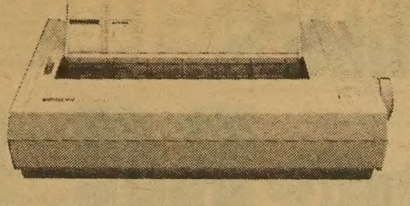
(415) 543-2190

589 MISSION, SF CA 94105 (MISSION & 2ND)

HOURS
10-7 M-F
11-5 SAT
UPS DELIVERY

LQ800

DOT-MATRIX PRINTER

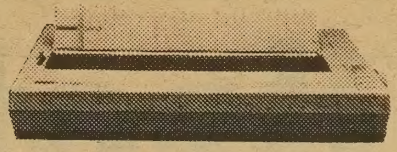


$430

- This 80-column 24 pin dot-matrix Letter Quality printer delivers outstanding results.
- Prints at 180 characters per second print head speed in draft mode, or 60 characters per second in Letter Quality mode.
- Front panel fingertip selection of Letter Quality or draft mode.
- Identity Modules allow you to choose between Extended Epson, IBM 5152 Graphics or Diablo 630 codes.
- Optional font modules give you the printed look you desire.
- Built-in 7K buffer allows you to use your computer while printing continues.

LQ1000

DOT-MATRIX PRINTER



132 Columns

SAME FEATURES
as LQ-800

$592

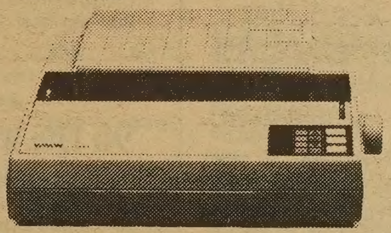
EX800

DOT-MATRIX PRINTER

$389

The high speed business printer for high productivity offices. Fast, efficient and durable, the EX-800 is the right choice where volume printing and ease of use is a must. It prints an ultra-fast 300 characters per second printhead speed in 12 characters per inch draft mode. Prints a page of text in approximately 15 seconds. Want the quality of typewriter-style characters? Simply switch to the 60 characters per second printhead speed Near Letter Quality mode. The EX-800 also prints text and graphics bidirectionally.

Epson's revolutionary new SelecType II feature lets you choose from eight different typestyles simply by touching one of the clearly marked illuminated buttons on the front control panel. No need to access control codes through software.



EX1000

DOT-MATRIX PRINTER

The high speed wide carriage printer. Designed for corporate level and small business printing tasks, the high speed EX-1000 is as versatile as you need it to be. Print high speed drafts, near letter quality copies and graphics of unsurpassed detail.

At 300 characters per second printhead speed in 12 characters per inch draft mode, the EX-1000 will boost throughput beyond the capabilities of ordinary office printers. To make the right impression, switch to the 60 characters per second Near Letter Quality mode for printing results that rival an office typewriter. And for maximum throughput, the EX-1000 prints text and graphics bidirectionally.

The EX-1000 has a 136-column carriage for fanfold and ledger paper up to 16-inches wide—perfect for printing spreadsheets. Even create customized documents using SelecType II. With fingertip ease select from eight different typestyles from the illuminate front control panel.

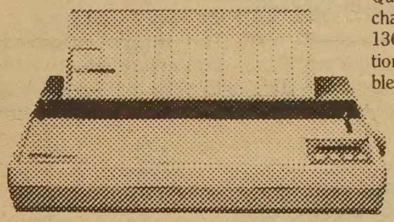
ONLY
$512

ANNOUNCING THE NEW LX800 COMING SOON!

LQ2500

DOT-MATRIX PRINTER

Top-of-the-line 24-pin dot-matrix performance. The advanced LQ-2500 offers high speed and dot-matrix versatility with letter quality printing at the touch of a button. In the high speed draft mode, print spreadsheets, mailing lists and first drafts of text at a fast 324 characters per second printhead speed. For added versatility, switch to the Letter Quality mode creating crisp characters at 108 characters per second. And for fast throughput, the 136-column LQ-2500 prints text and graphics bidirectionally. It also has five resident fonts that are accessible with the touch of a button.



ONLY
$899

FX-86e $312 FX-286e $449

EPSON PRINTERS! The Right Choice!

BAY AREA COMPUTERS

(415) 543-2190

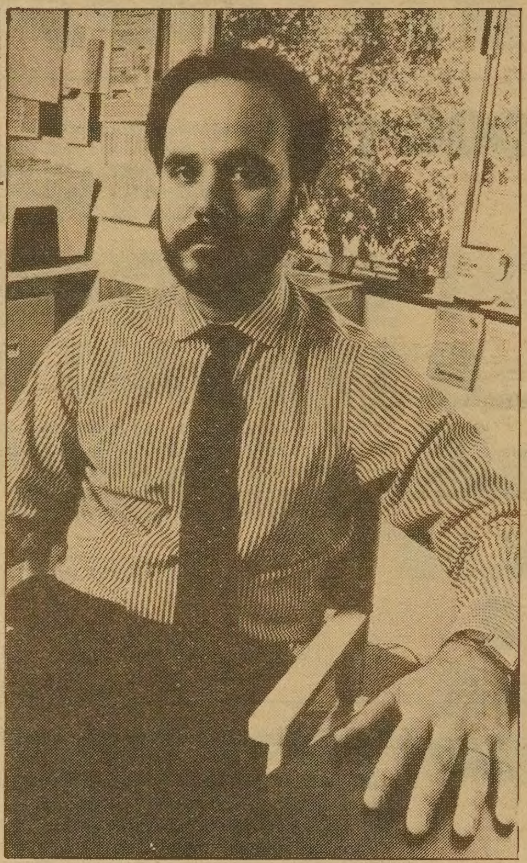
589 MISSION, SF CA 94105 (MISSION & 2ND)

HOURS
10-7 M-F
11-5 SAT
UPS DELIVERY

ISSUE NO. 32 MICROTIMES JUNE 1987

SPECIAL SECTION

LOTUS 1-2-3



Cover and contents photos: Ann Summa

Under Rick Gibson's direction, The Consortium provides an umbrella organization for developers of specific solutions for Lotus users. See page 50.

50 The Lotus Aftermarket: HAL And Beyond

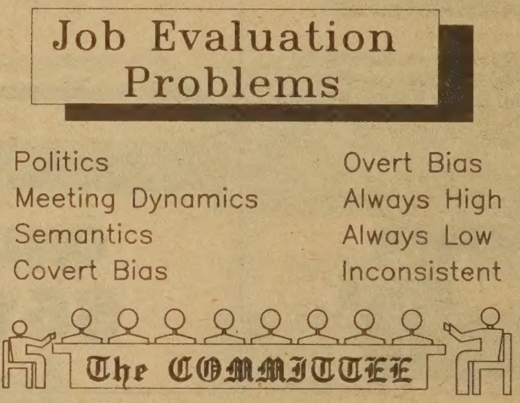
By Jeff Spurrier

"*HAL*'s Uncle," Rick Gibson of The Consortium, talks about the burgeoning market for add-on and add-in products for the industry-standard spreadsheet from Lotus, and how they provide useful tools for the business user. He also expresses his views on the also-burgeoning *1-2-3* clone market.

56 Common Spreadsheet Pitfalls – And How to Avoid Them

By Robert Moskowitz

Human error finds its way into spreadsheets and wreaks untold havoc all too often. Here's how to avoid those errors and evade calamities ranging from embarrassment to catastrophe.



If your audiences are getting bored with the same old stodgy presentations, Lotus Freelance Plus can add visual impact to your data.

62 Hands On: Lotus Freelance Plus

By Woody Liswood

How this powerful and flexible graphics package lets you create effective visual presentations of the data in your spreadsheet files.

70 Lotus Enhancement Products

A sampling of products for enhancing the performance of *1-2-3*.

78 Preview: The Amiga 2000

By Matthew Leeds

Here's what to expect from Commodore's new and long-awaited machine — from increased power, greater ease of use and enhanced IBM compatibility to the occasional incompatibility with existing Amiga products.

80 Microsoft's Second International CD-ROM Conference

By Terry Parkhurst

A report on some of the real-life CD-ROM applications shown at the CD-ROM conference in March, from data storage systems to a sophisticated hypertext reference system for auto mechanics.

86 Bookmark: First In A Series Of Intelligent Software

By Martha Conway

Or, how accidental data loss may soon be a thing of the past.

93 Kaypro Enters The 386 Era

By Robert Beauchamp

Early last year, Kaypro faced an uncertain future. Today, the company has made a successful transition from the CP/M to the MS-DOS marketplace, developed its own line of 80386-based machines, and announced a complete desktop publishing package. Kaypro president David Kay talks about the planning that made it all possible, and looks to the future.

HANDS ON

96 Life With A Macintosh SE

By Jim Wolcott

Apple's new standard business machine offers more power, an expansion slot—and a few changes from the Mac Plus that may take some getting used to.

100 Trapeze

By Charles Seiter

More than a spreadsheet, this is an unusually flexible and powerful reporting tool for business and scientific requirements.

104 Show Partner

By Sharon Rufener

This low-cost software package lets you create dramatic graphic and animated presentations and show them on your monitor screen.

108 The Thought Assisters: Software That Helps You Think

By Birrell Walsh

Three packages — *Tornado Notes*, *PC Outline*, and *Houdini*, which help you organize your ideas and present them more effectively.

COLUMNS

116 PC Systems

By Ken Milburn

An analysis of IBM's new PS/2 computer line and its implications for the future.

120 UNIX

By Bennett Falk

Sun Microsystems drops the price on its low-end workstation — and why this may bring a UNIX network to a workplace near you sooner than you expected.

124 Amiga/Commodore

By Matthew Leeds

A mixed bag of new products for the Amiga, C64 and C128.

126 Atari ST

By Helmi Kobler

Desktop publishing on the ST.

128 Data Base Management

By Warren Sirota

Relational Report Writer, a report generator for *dBASE III* files.

130 Telecommunications

By Brock N. Meeks

A comparison of four leading electronic mail services.

DEPARTMENTS

12 But Jan Lewis Says...

Microsoft heralds the era of CD-ROM — what this means to the average user.

16 Calendar Of Events
18 Letters
25 Industry News *By Patricia Lesser*
115, 122, 170 Buyers Guide
134 Reviews
140 Business Products
144 User Group Network
172 Classifieds
174 Index Of Advertisers

All Macintosh

BUSINESS

	Retail	Ours
Excel 1.04 *Microsoft*	395.	229.
FileMaker Plus	295.	156.
Guide *Owl*	134.	99.
Guide-Envelope *Owl*	199.	156.
Helix, Double *Odesta*	495.	277.
Helix, MultiUser	695.	442.
MindWrite *MindWords*	125.	89.
MacCalc *Bravo*	139.	93.
MacMoney *Survivor*	74.	49.
Microplanner Plus	499.	295.
More 1.1	295.	158.
Omnis 3 Plus *Blyth*		
Single User	495.	287.
Multi User		Call
PowerPoint *Forethought*	395.	197.
Reflex *Borland*	99.	64.
Stella for Business	295.	233.
Trapeze *DataTaylor*	295.	187.
Word 3.0 *Microsoft*	395.	229.
Works *Microsoft*	295.	177.
WorksPlus Spell	60.	45.
Write Now *T/Maker*	175.	97.

ACCOUNTING

Insight *by Layered*		
General Ledger	595.	527.
Rags to Riches *by Chang Labs*		
Gen Accounting 3 Pack		
(GL, AR, AP)	500.	295.

COMMUNICATIONS

Inbox Version 2.0		
Starter Kit	350.	286.
Pers. Connection	125.	86.
Does not require dedicated Mac as server!		
InterMail *InterNet**		
1 - 21 User	300.	Call
MacLink Plus *Dava* Viz	195.	147.
MacServe *Infosphere*	295.	148.
Microphone	79.	66.
VersaTerm reg. *or HP*	99.	79.

NETWORKING PRODUCTS

Tops *by Centram**		
Tops for the Mac	149.	127.
Tops for the IBM	399.	328.
Tops Print	189.	156.

(*products can only be sold through our Retail location and our Corporate Sales Dept.)

Farallon. Inc.		
PhoneNet Plus		
Din8 for Mac Plus SE	49.	41.
DB9 for Mac 512	49.	41.
Traffic Watch	195.	167.
Star Controller		1452.

MODEMS

	Retail	Ours
Avatex 1200hc	200.	133.
Hayes 1200	599.	392.
Hayes 2400	899.	582.
U.S. Robotics		
Courrier 2400	599.	395.
Courier 2400E	649.	427.
Courier 9600	995.	769.

UTILITIES

101 Macros for Excel	70.	57.
Copy II Mac Vers. 6.4	40.	21.
Disk Express *alsoft*	40.	27.
Hard Disk Util 2.0 *FWP*	90.	54.
HFS Back Up P.C.P.C.	50.	33.
LaserSpeed Single User	100.	68.
Memorandum *Target*	100.	66.
Sidekick 2.0 *Borland*	100.	59.
Spellswell *WorkingSoftware*	75.	54.
Smart Alarms *Imagine*	50.	33.
Superspool *Supermac*	60.	39.
SuperLaserSpool 1 User	149.	89.
SuperLaserSpool 5 User	399.	266.
Tempo *Affinity*	99.	59.

GRAPHICS

Fontographer 2.0 *Altsys*	395.	207.
Full Paint *Ann Arbor*	99.	52.
Glue *Solutions*	60.	39.
Graphic Works 1.1	80.	54.
Mac 3D 2.0 *Challenger*	250.	107.
Mac Draft 1.2a *IDD*	269.	147.
Picture Base *Symmetry*	99.	45.
SmartScrap & The Clipper	59.	40.
Stepping Out *BSD*	99.	76.
SuperPaint *Silicon Beach*	99.	59.

DESKTOP ENGINEERING

Logic Works *Capilano*	199.	144.
MacMathPack *Alms*	195.	148.
McCAD PCB Design Vamp	425.	347.
Cricket Graph	195.	123.
StatView 512+	395.	237.
Systat *Systat*	595.	495.

DESKTOP PUBLISHING

Adobe		
Illustrator	495.	372.
LaserFont Library		Call
Cricket Draw	295.	177.
Laser Author	195.	166.
Mac Tex FTL Systems	750.	595.
PageMaker *Aldus*	495.	Call
ReadySetGo! *Letraset*	395.	197.
ThunderScan *Thunderware*	229.	177.
Write Now *T/Maker*	179.	97.

ENTERTAINMENT

	Retail	Ours
Bridge 4.0 Artworx	30.	25.
Chessmaster 2000 *El Arts*	45.	35.
Flight Simulator *Microsoft*	50.	30.
Gato *Spectrum Holobyte*	50.	35.
Hard Ball *Accolade*	50.	34.
MacGolf PCA	60.	40.
Raquetball	60.	43.
Sub Battle Simulator *Epyx*	40.	30.

PROGRAMMING

Inside Mac *by Addison Wesley*		
Softbound Vol. 1, 2, 4	30.	23.
LightSpeed C *Think*	175.	122.
LightSpeed Pascal *Think*	125.	89.
TMON Debugger *Icom*	99.	77.
Turbo Pascal *Borland*	100.	60.
VIP *Mainstay*	125.	97.

HARD DISKS

DataFrame 20 *Supermac*	1099	799.
DataFrame 20 XP	1199	930.
DataFrame 40 XP	1999	1390
Bering *Totem*		Call

800K DISK DRIVES

DataSpace 800	349.	226.
PKI DS800	229.	199.

SCANNERS

Thunderscan *Thunderware*	229.	177.
Abaton Flatbed Scan 300	2295	2195.
AST TurboScan 300	1995	1590.

MONITORS

E-Machines	1995	1795
The Big Picture **17" Landscape** **Pixel Display: 1024 x 808** **80 dpi, Clip-on**		
Radius FPD	1995	1695
Full Page Display for the Mac Plus **New Snap-on Version, Display:** **15"portrait mode, 640x864**		
SuperView *Supermac*	1995	1795
Large Screen for Macintosh SE		

AND
MUCH MORE!

OVER 900 DISCOUNTED
ITEMS IN STOCK

GRAND OPENING JUNE 5 & 6

Mini MacExpo

Over 20 vendors showing products, Jean-Louis Gasse´ Saturday afternoon.

415-323-7557 — 800-323-1133

HOURS
10-7 M-S
12-5 Sunday

109 California Ave., Palo Alto, CA 94306 (Through May 16)
490 California Ave., Palo Alto, CA 94306 (Starting May 18)

WE'RE MOVING!

COMPUTERWARE

THE ALL-MACINTOSH SOURCE

Instant Credit for the Entire Family.

Instant Credit with No Money Down
Plus, Incredible Savings up to $600

This spring, our family of Apple® personal computers is easier than ever to afford. Just come into our store, and you may qualify for credit up to $2,500—in minutes.* And, there's no money down.

Which means, you can take your Apple home right away . . . then pay for it easily, in low monthly installments.

And that's just the beginning. This spring, you'll also take home incredible savings!

Simply buy your Apple computer before June 7, 1987, we'll give you savings coupons—worth up to $600—toward the purchase of the world's most popular software programs.

Programs that can help you run your household. Programs that can handle your business. And programs that will teach your kids to teach themselves.

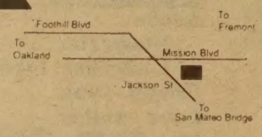
Instant credit—Incredible savings. Two easy, affordable ways we're rounding out the family circle this spring. For your free demonstration, see us today.

The power to be your best.™

COMPUTERCENTER
OF HAYWARD, INC.

Authorized Dealer

23951 Mission Blvd. (corner of Jackson St.) Hayward, CA 94544
(415) 538-7368



*See us for details regarding the Apple Revolving Credit Plan. Savings Coupons are available while supplies last.
Apple and the Apple logo are registered trademarks of Apple Computer, Inc. Apple IIGS, Macintosh are trademarks of Apple Computer Inc.
The power to be your best is a trademark of the Apple Computer, Inc.

RENT COMPUTERS
LASERPRINTERS

(415) 543-3933
(408) 292-1292

Macintosh Computer
Desktop Publishing
& Desktop Communications
Specialists

RENT-A-MAC inc.
1000 MARIPOSA ST. SF CA 94107

MICROTIMES

Consumer Audit BPA

PUBLISHER/EDITOR Dennis Erokan

EDITORIAL

MANAGING EDITOR Mary Eisenhart
ASSOCIATE EDITOR Patricia J. Lesser
EDITORIAL ASSISTANT Robert Beauchamp
EDITORIAL INTERN Kristen R. Coston
CONTRIBUTING EDITORS Robert D. Athey, Jr., Bennett Falk, Matthew Leeds, Michael Markowitz, Brock Meeks, Ken Milburn, Warren Sirota, Jeff Spurrier
CONTRIBUTING WRITERS Martha Conway, Jack Epstein, Ken Fermoyle, Bruce A. Fraser, Paul Hoffman, Helmi Kobler, Woody Liswood, Nancy Mulvany, Seth Novogrodsky, Ron Phillips, Aubrey Pilgrim, Newt Pippin, Steve Rosenthal, Ed Shurtleff, Birrell Walsh, Stephan Wickham, Wayne A. Yacco
CONTRIBUTING PHOTOGRAPHERS Marc Franklin, Ken James, Pat Johnson, Ann Summa
EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

DESIGN

ART DIRECTOR Lee Ann Nelson
ASSISTANT ART DIRECTOR Laura Reese
DESIGN ASSOCIATE Karen Cholodenko
ART STAFF Lindsay Dye, Tim Levin, Lisa Lusk, Angela Williams, Deborah Venezia
PRODUCTION COORDINATORS Jody Christy, Doug Boone
CAMERA OPERATOR John Moorehead
TYPESETTING Context, Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz
ACCOUNTING MANAGER Linda Schenk
ACCOUNTING Brian DeLuca, Carol Hunter, Lesley Hunter, Brian Murray
ADMINISTRATIVE ASSISTANTS Jef Brewer, Martha Conway, Ellen Santon

ADVERTISING

ASSOCIATE PUBLISHER Joe Amadeo
ASSISTANT TO THE ASSOCIATE PUBLISHER Carol Priest
ADVERTISING DIRECTOR Chuck Stanley
NATIONAL ACCOUNT DIRECTORS John Lockhart, Bill Reefer
Southern California Sales Manager: Reece A. Franklin
ADVERTISING & PROMOTION David Boyles, Ricky Brandon, Barry Green, Carolyn Schwartz, Jane Shepherd
ADVERTISING ASSISTANTS Anna Calofonos (San Francisco), Robbie Wood (Los Angeles)
National Reps.: Carol Oppenheimer

DISTRIBUTION

DISTRIBUTION MANAGER John Erokan
Art Holland, *Assistant Manager/LA*
DISTRIBUTION STAFF John Clefstad, Rand Crook, Roe Eyth, Danny Fernandez, Bruce A. Fraser, Frank Grygus, Eliot Kleinberg, Kirk Lanier, Trevor Loffs, Ron Lubben, Loren Ozaki, Jac Michanovic, Joseph Rafalo, Resource Dist., SDS, Bill Smith, Alan Spector; Racks by Free Distribution

MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 4. No. 5, June 1987, Whole No. 32 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900. MicroTimes™ is © 1987 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

Below Cost
Printing Calculator w/pur.
$9.88
Reg. 39.95

One of the *newest*, largest, and lowest priced displays in the USA!

WE BEAT EVERYBODY WE TAKE TRADE-INS

The New

COMPUTER BLOW OUT SALE!

Thank you to our thousands & thousands of customers for making this give away possible!

SUPPLIES

The Best Portable Computer

NEW **Toshiba 1100 Plus**
Only **1458^{88}**
Toshiba 3100
Only **2899^{88}**

PRINTERS/TYPEWRITERS

INTERFACEABLE

OLIVETTI - World's Best

Praxis 35	149^{88}
CX 440	258^{88}
CS 880	348^{88}

Spellwrite

100's of miscellaneous electric & electronic typewriters from 59^{88}
MUST SELL NEW, USED, DEMOS

SILVER-REED

EP 85	199^{88}
EP 87 w/int	299^{88}

SCM SMITH-CORONA

SCM 7000	299^{88}
Sterling	169^{88}
Smith Corona X1000	168^{88}
5100	198^{88}
6100	249^{88}
6500	299^{88}
8000	399^{88}

Spellwrite
Word Erase
Electronics

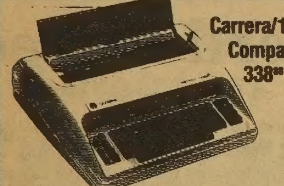
ROYAL Typewriters

Sat III	299^{88}
Beta 8000	229^{88}
Beta 8100	268^{88}
Beta 8200	299^{88}
Beta 9000	378^{88}

Spellwrite

IBM

OLYMPIA



Carrera/199^{88}
Compact S
338^{88} Int.

Orbit P (15 features)	189^{88}
121 XL 80K Spellwrite	288^{88}
Orbit XP (parallel int)	269^{88}
Orbit ESDM (memory)	599^{88}
Orbit/Int Heavy Duty	399^{88}

IBM

Selectric I	199^{88}
Selectric II	349^{88}
Selectric III New in Box	849^{88}
Quietwriter **(SUPER)**#7	799^{88}

Others

PANASONIC

500	369^{88}
508	429^{88}

Others

SMITH CORONA

brother

AX/10	148^{88}
CE50	189^{88}
EM31 memory	338^{88}
CE70 memory	369^{88}
411	469^{88}

WORD PROCESSOR

PWP System 12

Smith Corona Pwp 12	399^{88}
Smith Corona Pwp 14	488^{88}
Amstrad	388^{88}
Magnavox (w/rebate)	549^{88}

True-Blue PC Compatibles

Editors Choice #1

VICTOR

PC MAGAZINE

V286

- 512K RAM
- 80286 Microprocessor at 6/8 MHz User Switchable
- 8 Expansion Slots
- Parallel and Serial Ports Standard
- MS-DOS and VBASICA Standard
- 1 Year Warranty

$1688^{88}

VPC II

- IBM PC/XT Compatible
- 640K RAM
- 8086 Microprocessor at 4.77 MHz
- 5 Expansion Slots
- Parallel and Serial Ports Standard
- MS-DOS and VBASICA Standard
- 1 Year Warranty

Made in Japan—U.A.L. Approved
Backed by Xerox & Victor
We have other combos!

$968^{88} Editors Choice #1

1000's of CRAZY PRICES

HOT PRINTERS!
DAISYWHEEL, DOT MATRIX, & LASERS

HOT

DAISYWHEEL PRINTER
22 CPS
199^{88}

DYNAX

FORTIS .....DM 2010 .....318^{88}
BROTHER .....DM 2015 .....385^{88}
1 YR Guarantee Better than Epson

DX 15XL Serial	299^{88}
DX 25 7K	388^{88}
DM 40 Free Tractor! 24 Pin	579^{88}
DH 45	678^{88}

brother

1509 ......**Lowest**	378^{88}
M1109 (Loaded)	Call
T/W 5 (DH 45)	699^{88}
DM 2024	699^{88}

HEWLETT PACKARD

Laser Series II	1988^{88}
Laser Jet Plus	2948^{88}
Laser Jet 500	3799^{88}

C.ITOH

3510	1588^{88}
3540	1588^{88}

Panasonic

1080i	218^{88}
1592	479^{88}
3131 D/W	299^{88}

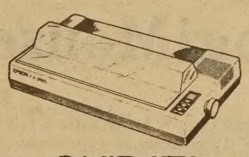
Others

STAR GEMINI

SG 10	228^{88}
NX 10	269^{88}
NB 2415 (24 pin)	788^{88}
Other Models	Call

TOSHIBA
(24 pin)

321SL	538^{88}
351C	1029^{88}
351	899^{99}
321 Par & Ser	Call



OKIDATA

Okimate 20	135^{88}
ML 182	258^{88}
192 Plus	374^{88}
193 Plus	529^{88}
292 P	489^{88}
293 P	659^{88}

Call For Latest Prices

EPSON

SP 1000	199^{88}
SP 1300 (300 CPS)	499^{88}
LX 80	226^{88}
DX 10	249^{88}
24 Pin (new)	438^{88}

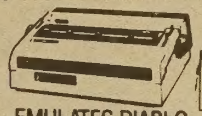
Others

IBM

Proprinter	388^{88}
Other models	Call

DIABLO

625	529^{88}
635	1088^{88}



THE BEST

EMULATES DIABLO

SILVER-REED

Exp 400 (10 CPS)	198^{88}
Exp 550 (23 CPS)	379^{88}
Exp 800 (40 CPS)	689^{88}
Exp 500 (16 CPS)	249^{88}

NEC

P5 XL (24 pin)	1048^{88}
3550	799^{88}
P6 (24 pin)	458^{88}
P7 (24 pin)	638^{88}
Other models	Call

JUKI

6100	355^{88}
6300	669^{88}
5510	359^{88}

Canon

BJ 80	399^{88}
LPBP-8	1948^{88}
Other Models	Call

FUJITSU

Daisymax 320	1039^{88}
DX 2100F	379^{88}
DL 2400 Color	1149^{88}

CITIZEN

120D	189^{88}
MSP 10	299^{88}
MSP 15	374^{88}
MSP 35	458^{88}

Call For Latest Prices

COPIERS

SAVE 50-60%

Canon PERSONAL COPIERS (PC)

Sharp Z50	**555^{88}**
Sanyo	**599^{88}**
Sharp 7100	**979^{88}**
Ripro 2070	**1688^{88}**
Ripro	**779^{88}**
Royal 1001	**629^{88}**

Many Others

Sharp Z70
Enlargement
Reduction
Free Set-up
Was 1395
Now 888^{88}

Sharp 8100
Auto Exposure
Free Setup/delivery
Reduction mode
Was 3995
Now 2388^{88}

Ricoh Jr.
Personal Copier
Compact Color Copies
Superb Quality
Beats Canon
Was 1199
Now 495^{88}

Canon PC-10
588^{88}

Canon PC-20
729^{88}

Canon P3
539^{88}

Canon P5
609^{88}

Canon PC-25
773^{88}

CASH REGISTERS *SAVE 50-60%*

Sharp 1017
139^{88}

Sharp 1050
219^{88}

Maxi
179^{88}

Sharp 2050
299^{88}

Victor 3001
249^{88}

Royal Deluxe X85
349^{88}

For any size business

ELECTRONICS
We have others & accessories

NEW LOCATION

YOU MUST BRING AD
TO GET THESE PRICES

OEM INC

102 Grand Ave., So. San Francisco, CA 94080

(415) 872-6668
HOURS
M-F 9-5 Sat 10-5 Thurs till 7

CALL FOR DEALER PRICES

CORPORATE DISCOUNTS

THE COMPUTER INTERFACE SPECIALISTS

Specializing in dealer, department store, mail order and premium sale. All offers limited. Call or come in for details. Cash, credit card, check or money order. We ship UPS — add $5^{00} for handling.

PHONE ORDERS WELCOME

master charge VISA

1000's TO CHOOSE FROM • 1000's IN STOCK!

MONITORS

Others	Call
Casper Amber	98^{88}
Samsung Deluxe	98^{88}
Amdek 310	148^{88}
Nanao 7030n	338^{88}
Nanao Green	128^{88}
Nanao EGA 842	488^{88}
Victor	99^{88}

NEC Multisync
Thompson

FAX MACHINES
Sharp $1348^{88}

SOFTWARE SOLUTIONS +

(415) 237-5257
Mon-Sat 10am-6pm

11185 San Pablo Ave., El Cerrito, CA 94530
Trademarks of Respective Manufacturers

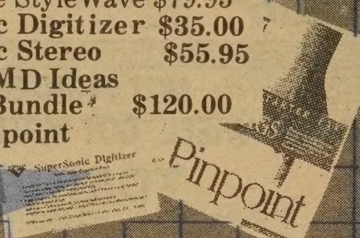
IN STORE SP

30% — 90

Good Thru June 12, 1987
* SUGGESTED RETAIL

IIGS Corner

Hacker II Activision	$35.95
AST-Vision Plus AST Res.	$250.00
Kids Time II Great Waves	$31.95
Visualizer PBI Software	$79.95
GS Ram 256K Applied Eng.	$150.00
Word Perfect Word Perfect Corp.	$109.00
Shanghai Activision	$39.95
Paint Works + (512K) Activision	$63.95
Music Studio (512K) Activision	$63.95
Music Const. Set Elect. Arts	$39.95
Multiscribe StyleWave	$79.95
Supersonic Digitizer	**$35.00**
Supersonic Stereo Card. MD Ideas	**$55.95**
Pinpoint Bundle* Pinpoint	**$120.00**



GS Ram

Apple

Turn your IIGS into a giant. Simply plug GSRAM into the IIGS memory expansion slot and you've got up to 8 megabytes of RAM at your fingertips. Features include: Automatic Memory recognition by the IIGS; Expandable to 1.5 MEG on main card; Accelerates AppleWorks and many other programs; Low power consumption; Advanced Computer Aided Design.

256K **$150^00**

512K **$190^00**

Word Perfect

IBM

Performance Report. With a built-in thesaurus, Word Perfect 4.1 lets you choose synonyms for any words in your document, and by splitting the screen horizontally, you can view 2 documents at the same time. Choose either Text columns, newspaper columns or parallel columns. Draw horizontal & vertical lines either single, double or with asterisks.

WordPerfect CORPORATION **$225^00**

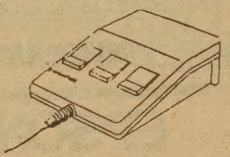
Bus Mouse Now Available

LogiMouse

IBM

Logimouse is now available with new software. Logimouse sets new standards for the mouse with: LOGI-MENU; CLICK; POINT-CLICK-SHELL; POINT EDITOR.

LogiMouse w/Logi Paint	**$99.95**
LogiMouse w/Generic CADD	**$139.95**
Bus LogiMouse w/Logi Paint	**$109.95**



LOGITECH

Fast Trax

FastTrax improves the performance your hard disk and reduces wear and tear by consolidating scattered pieces of files and directories. Unlike other optimizers, FastTrax places most files within cylinder boundaries, eliminating unnecessary disk seeks. FastTrax can also assign groups of files and directories to specific areas on your disk, further increasing disk productivity. Includes a comprehensive visual report. Compatible with copy-protection schemes. Both safe and fast. NOT copy-protected.

$35^00

Phone Net Also Available

Tops

Macintosh/IBM

The Computer Industry's most advanced network now allows you to transfer files from IBM, with programs like Lotus 1, 2, 3 and Microsoft Word, to Macintosh, with programs like Excel and Work. Distinguishing features include . . . Inter-Operating System Capabilities, Distributed File-server Architecture, Transparency and Ease of Use and all at a low cost

Macintosh **$124^95**

Centram systems west IBM **$350^00**

Cygcom 12

IBM

Compatible with IBM PC, XT, AT, CCITT V-22 1200 bps asynchronous, CCITT V-21 0-300 bps asynchronous and Hayes Compatible. Features include: Adaptive Equalization for noisy phone lines; Busy detect, Detects hanset off-hook; Tone or pulse dialing; Programmable Timing; much more. Pop-up Communication Software with Electronic Mail Checking Free!

$125^00

Free GET™ Software

CYGNET.

XP Upgrade Now Available $99^95

DataFrame 20

Macintosh

DataFrame's design is just as important as its performance. The drive comes preformatted so it's simple to hook up — DataFrame boots from the hard disk with no floppy required. It takes full advantage of the new hierarchial file system, so all 20 megabytes are available all the time with room to expand up to 8 drives. 5¼″ disk drive.

SUPERMAC TECHNOLOGY **$759^00**

Free Audio Cassette on Each Box

Fuji Disks

DSDD 5¼″ **$10.95**

Advertised Specials Good May 15 — June 12, 1987

ECIALS

% OFF*

Xerox Desktop Pub. Series:

Ventura Publishing Edition

IBM

Page and Document Composition software for IBM PC/XT/AT and compatibles. Integrate input from many systems, incorporate graphics easily and flexibility. Edit as you go, pick your own sytle sheet . . . then watch as your document is automatically formatted.

$675.00

VENTURA

High Density Dysan Disks

5¼″ High capacity DSDD 1.2 MEG.

For AT

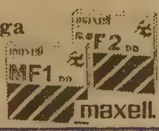
~~$32.95~~

$27.95

Maxell 3½″ Disks

Apple/ Macintosh/IBM/ST/Amiga

SSDD	$11.95
DSDD	$21.95



Shadowgate

Macintosh

Enter the world of Shadowgate, one of Mindscape's innovative graphic adventures. They're games which draw you into the action. Explore and manipulate the deeply textured, exciting world that unfolds before you. Shadowgate is like no other adventure you've ever experienced.

$39.95

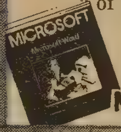
MINDSCAPE

Microsoft Word

Macintosh

Buy Microsoft Word for the Macintosh today for $149.95 and receive all-new Microsoft Word Version 3.0 for the Macintosh for just $50.00! Suggested retail price for Word 3.0 will be $395.00.

Version 3.0 with Purchase of Microsoft Word $50.00



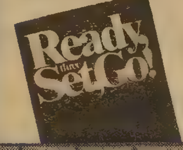
MICROSOFT.

Microsoft Word $135.00

Ready, Set, Go! 3

Macintosh

Ready, Set, Go! 3 redefined desktop publishing and word processing by combining both concepts in one product. With Ready, Set Go! 3 and an Apple Macintosh™ anyone can produce professional-looking documents quickly and economically without having to rely on time-consuming and expensive outside services.



$229.95

Letraset USA

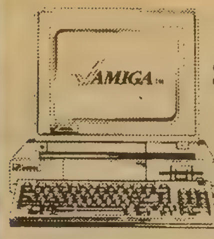
Doug Clapp's Word Tools

Macintosh

Doug Clapp's Word Tools has been designed to help you write better. To catch mistakes, to suggest better ways to write things, and to encourage you to think about your writing. There can't be enough good writers.

$63.95

AEGIS



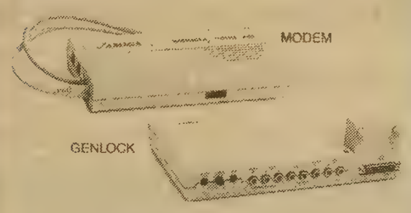
$1149.95*

Amiga 512K & Color Monitor

Amiga

A Vibrant Expression of Creativity! Making it in today's world takes talent, hard work and occassionally, the right connections. Like the Amiga personal computer from Commodore. The Amiga computer is faster and more powerful than any personal computer in its price range. It lets you do up to four things at one time. And is equipped with a dynamic sound system, three-dimensional graphics, and palette of over 4,000 colors. See what Amiga can do for you, and connect with a creative edge.

Graphic Craft w/Amiga	**$59.95**
Text Craft w/Amiga	**$59.95**
256K Amiga Exp. RAM	**$95.00**
GenLock	**$275.00**
Modem 1200 RS	**$175.00**



*Cash Price-Additional 3% for VISA, MC, etc. 5% for American Express.
QUANTITIES LIMITED TO SUPPLY ON HAND.

Commodore 256K Memory Exp. $95.

Amiga Corner

Silent Service	MicroProse	$31.95
Uninvited	Mindscape	$39.95
Digi-View	NewTek	$175.00
Sinbad	Mindscape	$39.95
S.D.I.	Mindscape	$39.95
Amiga DOS Express	Bantam	$24.95
World Games	Epyx	$31.95
2 on 2 Baseball	Gamestar	$35.95
Amiga DOS Manual 1.1/1.2	Bantam	$24.95
Pro Video CGI	JDK Images	$180.00
Grid Iron	Bethesda Software	$55.95
Deluxe Lib. Seasons and Holidays	**Elect. Arts**	**$27.95**
Sonix	**Aegis**	**$63.95**
Macro Assembler	**MetaComco**	**$79.95**
Pro Write	**New Horizons**	**$105.00**

SOFTWARE SOLUTIONS +

[illegible]
Mon-Sat 10am-6pm

[illegible] San Pablo Ave., El Cerrito, CA [illegible]
Trademarks of Respective Manufacturers

BUT JAN LEWIS SAYS . . .

Microsoft Heralds Age Of CD-ROM

Microsoft has twice made its contribution to CD-ROM, first with CD-ROM extensions and now with Microsoft Bookshelf, a software package consisting of 10 reference works including the American Heritage Dictionary, Chicago Manual of Style, Roget's Thesaurus, The World Almanac, and Business Information Sources, all on a CD-ROM disk. With the bundling of Bookshelf and Amdek Laserdrive-1 for $1,000, Microsoft has plunged into CD-ROM product, where CD-ROM marketing director Carl Stork says the water is fine.

> **Microsoft's Carl Stork: "You're starting to see CD-ROM become a much more commercial medium. People are selling their information on a commercial basis, using CD-ROM as a distribution channel."**

How has the CD-ROM industry changed between the first and second Microsoft CD-ROM conferences?
In March of 1986 CD-ROM was, for many people, a buzzword—something that had great potential. People really needed hands-on experience with it; there wasn't any real product yet. People had never seen their own data on CD-ROM. That really was the year of the prototype.

In 1987 we see much, much more of the year of the product. People are saying, "Okay, we know what CD-ROM is, and we know that it's useful, and now we're going to really apply it."

I think you're going to see CD-ROM coming to fairly widespread use in what I'll call captive applications in 1987. A captive application is used to deliver information to either internal sales or an internal organization or to a captive customer base, like dealers or agents. I think that is a large part of what the CD-ROM marketplace in 1987 will be.

The second thing that's happening in 1987 is that you're starting to see CD-ROM become a much more commercial medium. What people are actually selling is their information on a commercial basis, using CD-ROM as a distribution channel. But I think that's going to be smaller, compared to that captive or internal market.

How does Microsoft see itself involved in the CD-ROM arena?
We're involved in really a couple different ways. The first is that we're involved with the systems software in the case of a system application that sits on top of the computers—through the MS-DOS and ROM extension.

The second thing that we're doing publicly right now is the Microsoft Bookshelf product, and that's a real application of CD-ROM; it's something that's very general-purpose. Virtually anyone using the computer for writing could use this product. And we think it's an example of a very powerful horizontal application that will sell a lot of drives, and will really get CD-ROM out into the hands of the users. And it's our intention to do other CD-ROM products like Microsoft Bookshelf, although we don't have any we're prepared to announce at this point.

The third area in which we're active is developing software tools. Our major interest in CD-ROM is on the longer term, from multimedia application of CD-ROM technology, applications that integrate not just data but audio and video.

Does this include graphics? Are we talking full-motion video?
Quite possibly full-motion video as well. We found the CD-I chips from RCA quite exciting. But in fact, personally, not only are they quite exciting, I think they are what makes multimedia applications really compelling ... the type of things that make me say, "Yeah, I want one in my home." I mean, my kids are going to like this. It's really a good tool.

What do you perceive as the market for your CD-ROM offerings?
We are a product company, so we try to design for broad classes of users. And the CD-ROM products are no exception. Our intention with Microsoft Bookshelf, for example, is that the product can be used by anyone who uses a PC for writing, which our studies say are 91 percent of all PC owners. That's a good statistic.

What prompted you to bundle the CD-ROM extensions and Bookshelf with the Amdek Laserdrive-1? What other bundling arrangements do you have planned?
The reason we bundled Bookshelf with the Amdek Laserdrive-1 is simply that we have a very basic marketing problem with this product, and that is, there's not a very large installed base for CD-ROM drives. And the people aren't used to going to computer stores to buy any CD-ROMs, so putting Bookshelf together with the Amdek Laserdrive and the MS-DOS and ROM extension—it's the single-solution concept. The user wants to have that capability—to go to the computer store and get everything you need to get up and running in one easy purchase. So a bundle of this sort is one of the key things that our market plans early on.

We don't have any other bundles right now, but even now, the Amdek Laserdrive-1 is the only drive that is going to be used in retail. But, at this point, nearly everyone else is manufacturing drives and trying to sell them on an OEM basis or large quantities to corporate customers. And we certainly are interested in OEM customization of Microsoft Bookshelf to large corporations for their internal use.

Is there an issue at all of compatibility with other players that may come out into the market, other CD-ROM players?
We don't think that there will be any issue. Bookshelf will work with any IBM-compatible system that has MS-DOS with the CD-ROM extension.

Our strategy is to sell to drive manufacturers, and we're hoping that most drive manufacturers will choose to include the MS-DOS CD-ROM extensions with the drives that they sell that are hooked up with the IBM PC and compatibles. That's very important for all participants in the CD-ROM business. We want to be able to assume there is a standard user environment out there—the same way that Lotus, when they sell a copy of 1-2-3, they put it on an MS-DOS disk and MS-DOS is out there. They don't worry about getting MS-DOS out of the end user. They simply want to get it to the computer—it's assumed.

> **"We think Bookshelf is an example of a very powerful horizontal application that will sell a lot of drives and really get CD-ROM out into the hands of the users."**

CD-ROM business needs to make that kind of assumption in a bad way. The developers don't want and shouldn't be expected to have to worry about providing system software problems with the CD-ROM drive. And again, we think that Microsoft Bookshelf will help. We can tell people, "Hey, the water's okay, comes on in."

We're excited because we think that CD-ROM is going to let us reach a new level of users in the office,

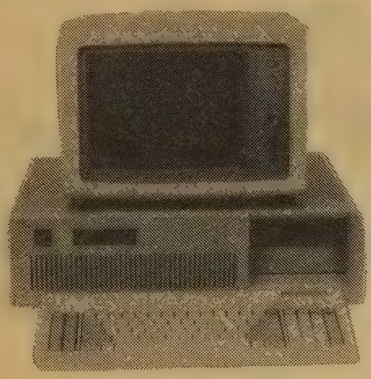
---

Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from Computer Insider, *PARG's newsletter.*

We take the risk out of buying PC's

All prices are for complete systems with hard drive and monitor and include a 30 day risk-free trial!

286 with 20MB and monitor $1499



6/10 MHz

keyboard switchable

Base system only $989!
includes 512K,
1.2 TEAC, WDC,
Maxi or "click"
keyboard

Micro 1 286+	The "competition"
• PHOENIX BIOS for 100% compatibility	• AMI or "other" BIOS
• 6 and 8 MHz switchable	• Speed is not switchable: requires alteration of motherboard
• 512K on 1 MB motherboard	• Varies
• 1.2 MB TEAC	• Off-brand controller with "WD Chip"
• Western Digital controller	• Varies
• American AT-style keyboard	• Buyer beware
• FCC Class B	• Cheap power supply costs $40 less
• UL approved power supply	• None or illegal copy
• Legal Setup and speedtest	

386AT 44MB, monitor only $3995
using the genuine INTEL motherboard

Now shipping with 80387: not even COMPAQ can offer this!

Now available with multi-tasking DOS (25 tasks!!!)

**True 16 MHz, 32 bit performance!
2 to 3 times the speed of an AT!**

- Phoenix BIOS • 44 MB Hard Disk
- High resolution amber tilt and swivel monitor
- Hercules-compatible monographics card with parallel port
- Western Digital dual floppy/hard drive controller
- 1.2 MB TEAC floppy drive
- AT-style keyboard (American-made Maxi or IBM-like click style)
- (2) 32 bit slots running at 16 MHz • (2) 8 bit slots for XT cards
- (4) 16 bit slots running at 8 MHz for compatibility with AT cards

Let us upgrade your existing AT $2495!

12 slot fileserver

- **12 Slot motherboard**
- **240 Watt power supply**
- **4 drive openings**
- Industrial quality/desktop design
- 100% compatibility guaranteed
- American design
- On-site service available
- Ruggedized and rack-mounted available
- Lowest failure rate of any product we have ever sold!

Complete:
$1987
1MB RAM, 30 MB
(38 ms) amber monitor,
1.2 MB, AT keyboard

Complete 10 MB XT system
ONLY $799!

Regular price $995

Phoenix BIOS guarantees compatibility!

Quantities limited!

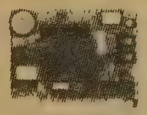
- 10 MB Miniscribe hard disk
- Dual speed turbo • 4.77/8 MHz
- 640K motherboard with 256K
- 150 watt power supply
- FCC Class A & B approved

15 MB add $60

- 12" high resolution amber monitor
- 60% faster than IBM
- Hercules com. monographics
- 360K Fujitsu floppy
- parallel printer port

10 MHz option add $49

More Products



• **EGA**	**$179**
• **Autoswitch**	**$279**
• **Enhanced KB**	**$69**
• **1200 Baud**	**$89**
• **2 MB EMS**	**$129**

Call for catalog

Micro 1 takes the risk out of buying PC compatibles...

30 day unconditional money-back guarantee!

MICRO 1

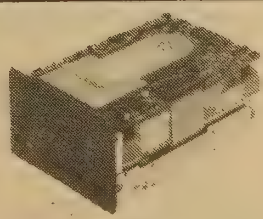
557 Howard St. San Francisco, CA 94105

(415) 974-5439

Tech support: (415) 974-6997
FAX: (415) 974-6996
TWX: 510-601-8047

Terms: We accept VISA, MasterCard, American Express (add 5%), company checks and corporate and institutional PO's. PO's may incur additional fees. 30 day money-back guarantee

Hard drives



- **10 MB $199**
- **20 MB $315**
- **30 MB $339**
- **40 to 140MB: call**

Prices include controller and cable

Computers can be hazardous to your health!

Stop Glare, VLF/ELF Radiation & Static Now!

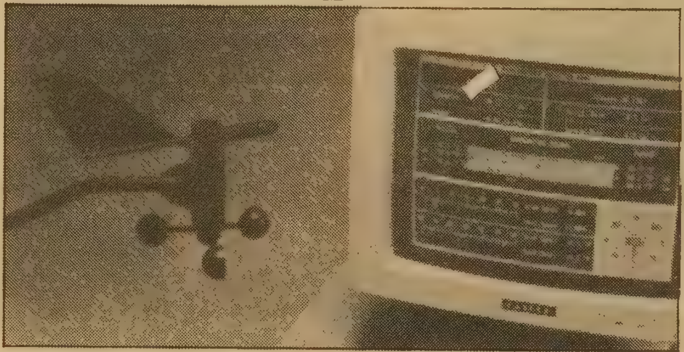
Professional Plus Features:
- Cuts 99% of screen glare
- Stops eyestrain/increases contrast
- Improves resolution
- CAD CAM & custom sizes available
- Only $99

OTHER PRODUCTS:
Printer sound covers • Chairs
Glare filters - $19.95 + up
Adjustable computer furniture
Many other accessories
- **Carbon Mesh Radiation Filter Only $49.95**

Call for a **FREE** filter trial

ERGONOMIC COMPUTER PRODUCTS
"PEOPLE PRODUCTS FOR THE COMPUTER"
San Francisco, CA 415-673-5757

Add a weather station to your computer.



You know how much your computer already does for you. Now it can give you the weather as well. With PC WEATHER, you get all the hardware and software you need to turn your IBM PC, XT, AT or other compatible into a personal weather station.

MEASURE AND DISPLAY

☐ Wind speed
☐ Wind direction
☐ Inside and outside temperatures
☐ Barometric pressure
☐ Wind chill factor
☐ Rainfall (optional extra)

$350 VISA/MC/AMEX Accepted

To order, call or write:
Technology Marketing Inc.
4000 Kruse Way Place
Bldg. 2, Suite 120
Lake Oswego, OR 97035
1-800-247-5712

because it can communicate visually and orally, both delivering more benefit and making it easy to use. And we're even more excited because with CD-ROM technology, the computer finally has promise of really being a useful device in the home. Up until now, most people bought computers to play games or teach their kids to program, basically. And, with the kind of systems you can build based on CD-ROM, we really think that there'll be an opportunity to put the computer—whether it's called a computer or not, I mean, it might be a computer in sheep's clothing, or it might not be a computer at all—but you put that in people's homes and really provide a useful tool.

CD-ROM—The Victrola Of The '80s?

There's more in the way of similarities between the record player and the personal computer than we tend to think about. Some people may buy a computer to run one program, like *Lotus* or *WordStar*, but more people will buy a computer if it will run many other software packages today and in the future. (Hence the gravitational pull of defacto standards and cloning)

Same with record players. In the early days of the introduction of the record player, the initial buyers bought the player to listen to a very limited selection of records. The early buyers of the record player didn't have a Tower Records or a Wherehouse Records to run down to and select the latest titles. The early buyer was the pioneer. He bought the player to enjoy the limited selection. Maybe volumes and availability of titles would go up, but that was a risk that the early user of a technology took.

A similar phenomenon is likely to happen with CD-ROM. For example, Microsoft has announced its first consumer CD-ROM product, Bookshelf. On one CD-ROM, Bookshelf contains a variety of reference material, all easily-retrievable at the whim of the user. Lots of computer users will pay $1,000 for Bookshelf, a package which includes the Microsoft published works and the bundled Amdek Laserdrive-1. The CD-ROM buyer of today is the descendant of that early record buyer of yesteryear. Today, these descendants will buy the "record player" (CD-ROM drive) to play one "record" (e.g. Bookshelf). But eventually, there'll be lots of "records" (titles) for the general Joe Public, who, by that time, probably has a CD-ROM player for which he paid $300-$500.

Now, how do we get there from here, considering that CD-ROM hardware and software bundles start at $1,000? After all, Lotus's One Source (weekly stock market data on CD-ROM) is up to $26,000 per year, the Grolier's Encyclopedia is $1,000-$1,500, (and that doesn't yet include the kind of line art that you get in a hard-copy Grolier's!), and Bookshelf is "mass market" at a cool grand.

Well, here's how: The early buyers (the descendants of the early record player buyer), justify $1,000 for something that can be used with one record—Bookshelf, for instance. But then, if Microsoft gets its way, and the MS CD-ROM extensions are built into the drives, then other titles, available for $199-399, would rapidly become available for the buyer who initially paid the $1K to "listen to" one "record."

Probably many of us reading this say that's nuts. Who would buy a record player for only one record? Well, think about it. If the record player were a recent invention, and you heard Billie Holiday singing "Take A Little Piece Of My Heart," wouldn't you consider buying the record player just to listen to Billie for awhile? This phase of the cycle generates more titles, as volume brings price down and as decreased prices increase volume. This phase provides the early buyers with more usefulness from their purchase, and allows people who haven't bought one to start thinking about it.

> **In the final analysis, cheap and easy access to data bases will be the Great Equalizer of the Information Age.**

Eventually, a crossing of two cycles occurs. The general public starts thinking they wish they could afford one. But they can't.

Simultaneously, the world is hit with the tail of the compact disk phase which the world economy is going through now: not enough capacity to produce the compact disks the consumer wants. More manufacturing facilities are built. Inevitably, this leads to an overcapacity of CD facilities. With a little bit of retooling, these factories are converted to CD-ROM drive production facilities—just in time to bring the end user price down to under $500 and to bring on the next boom cycle.

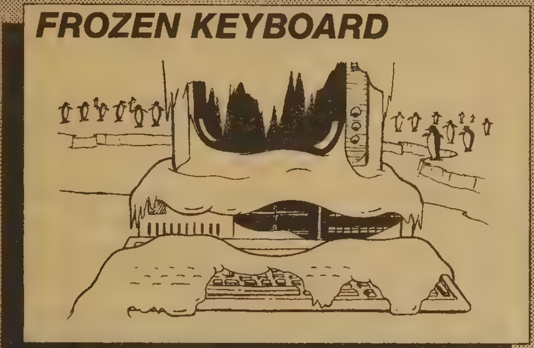
No more Information Lords and Information Serfs. In the final analysis, cheap and easy access to data bases will be the Great Equalizer of the Information Age. ☐

FRUSTRATION INSURANCE

NOW *Non*-Copy Protected!

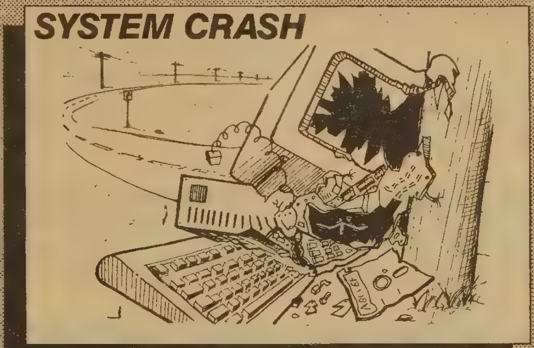
For Only $99.95 BOOKMARK™ Protects You From:

FROZEN KEYBOARD



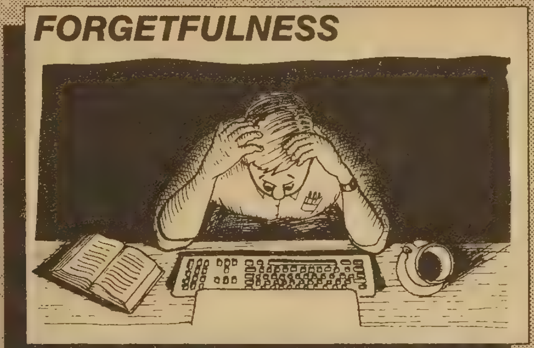
When the keyboard freezes up you've got to reboot—and you can't even save first. But with BOOKMARK, work is already saved.

SYSTEM CRASH



System crashes used to mean complete loss of data in memory, but not any more.

FORGETFULNESS

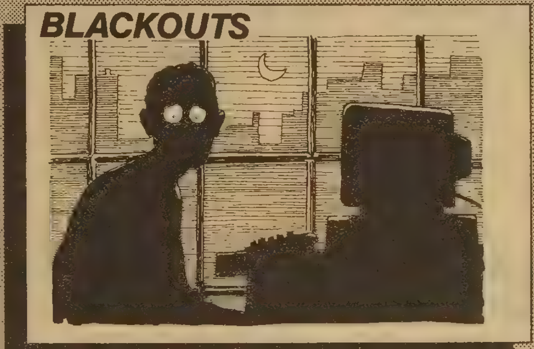


You can even power down without saving and not lose more than a few moments' worth of work!

NOVICE MISTAKES

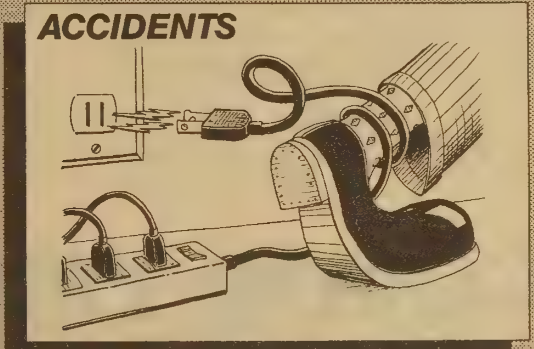
Novices can't possibly go wrong when everything's already saved.

BLACKOUTS



Work in progress, up to the previous BOOKMARK placement, is safe!

ACCIDENTS



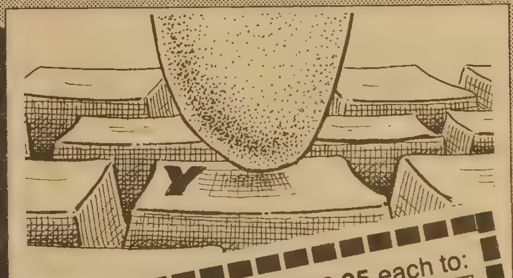
BOOKMARK protects you against loss of work and time due to unexpected incidents.

BOOKMARK™

Memory-resident utility software that automatically saves work in progress to the hard disk at user-definable intervals.

GET BACK FASTER!

Resume where you left off with a single keystroke.



To Order Call Toll *FREE*

800-544-MARK

In California Call Toll Free **800-543-MARK**

or call for the dealer or distributor nearest you.

INTELLISOFT™

INTERNATIONAL

51 Digital Drive • P.O. Box 5055 • Novato, CA 94948 • 415-883-1188

See us at COMDEX/Spring '87

June 1–4, 1987
Georgia World Congress Center
Atlanta, GA Booth #'s 4034 & 1200

Requirements:
IBM PC/XT/AT or 100% Compatible • 256k to 640k • IBM DOS 2.1 or Higher. 1 Floppy Drive • Hard Disk Drive (10 Megabytes Minimum) • Video Display Adapter IBM (Monochrome, Color, Enhanced Color), Hercules, AST (BOOKMARK occupies an equivalent space on hard disk as in system RAM plus video RAM)

BOOKMARK™ is a trademark of INTELLISOFT International. Copyright © 1986 by INTELLISOFT International. All rights reserved. Patent Pending. IBM PC/XT/AT are registered trademarks of International Business Machines Corporation. Hercules is a trademark of Hercules Computer Technology. AST is a registered trademark of AST Research, Inc.

YES! Please send ___ BOOKMARK(s) at $99.95 each to:

SHIPPING AND BILLING ADDRESS

Name __________ Co. __________
Street # __________
City __________ State __________
Zip __________ Phone (__________)

PAYMENT METHOD

☐ Money Order ☐ Visa
☐ MasterCard ☐ Amer. Exp.

____/____/____/____
Account Number

Expiration Date

Signature

FORMAT **(check one)**
☐ 3½″ ☐ 5¼″ ☐ Mac Plus

ORDER INFORMATION

Please send __BOOKMARK(S) at $99.95 each (total) ______
Sales Tax $6.00 (Calif. Residents Only) ______
Shipping & Handling ($5.00 per unit) ______
TOTAL ______

New! Mac Plus Version

CALENDAR OF EVENTS

Through June 1987 Little House Computer Classes. Many times and subjects available. Call (415) 326-2025 for information.

May 1-July 31 Seven Computer Artists. Hi-Tech Exhibition Space, San Francisco, (415) 864-5600 for information.

May 16 Marin Computer Show. San Rafael Civic Center. Call Golden Gate Shows, (415) 388-8893 for information.

May 18 How To Automate Your Business Accounting. Lindquist, Von Husen & Joyce, San Francisco. Call (415) 397-6901 for registration information.

May 19 Great Plains: Business Accounting Software. Calsoft, San Francisco. Call (415) 397-6901 for registration information.

May 20 BPI Enterprise: Business Accounting Software. Calsoft, San Francisco. Call (415) 397-6901 for registration information.

May 20-21 How To Buy And Sell Business Opportunities. Best Western, Santa Rosa. Call American Business Consultants, Inc. (408) 738-3011/732-8931 for registration information.

May 20-22 Computer and Business Equipment Showcase. Anaheim Convention Center. Call The Interface Group, (714) 476-2300, (415) 364-4294 for information.

May 20-22 Interconnections '87. Conference sponsored by the Independent Computer Consultants Association. Call (800) 438-4222 for information and registration.

May 21 Computerize Your Business Accounting With Solomon III. Hyatt Union Square, San Francisco. Call (415) 397-6901 for registration information.

May 21 Software Entrepeneurs' Forum. Clubhouse, Palo Alto MMunicipal Golfcourse, (415) 854-7219 for information.

May 22 Unilink: CPA Client Write-Up. Calsoft, San Francisco. Call (415) 397-6901 for registration information.

May 23 Desktop Publishing. Center for Higher Education, San Ramon, (415) 866-1822 for information and registration.

May 23 Bay Area Computer Swap. Cow Palace, San Francisco. Call Microshows, (800) 433-7469, (415) 340-9113 for information.

May 29 Lotus Productivity Seminar. Sponsored by 800-Software. Hyatt Regency, San Francisco. Call (415) 644-3611 or (800) 225-9273 for reservations and information.

May 30 Santa Rosa Computer Show. Sonoma County Fairgrounds. Call Golden Gate Shows, (415) 388-8893 for information.

May 30-June 1 Show Biz Expo. Los Angeles Convention Center. Call (213) 668-1811 for information.

June 1-4 COMDEX Spring '87. Georgia World Congress Center, Atlanta, GA. Call The Interface Group, (714) 476-2300 for information.

June 3 Logic Programming for AI. Stagecoach Restaurant, San Francisco. Assoc. for Women in Computing (415) 655-3110 for information.

June 6 Sacramento Computer Show. Cal Expo. Call Golden Gate Shows (415) 388-8893 for information.

June 6-7 Computer Supermarket. San Mateo County Fairgrounds. Microshows (415) 340-9113 for information.

June 8-10 OIS International CD-ROM Conference. London, England. Call Meckler Publishing (203) 226-6967 for information.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the December issue, on the street in November, is October 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

COMMITMENT

From start to finish—at **ATS** our first and our last commitment to our customers is dedicated and quality service.

- In House and Field Technical Specialists • Consistent, Reliable and Affordable Service.
- Varied Mix and Match Service Plans. • Quick Service Response Time.
- Specialized Service Programs are available to our direct and dealer Customers.

At ATS We Are In Step With The Changing Market Place.

• MICRO COMPUTERS • LASERJET PRINTERS • DOT MATRIX AND DAISY WHEEL PRINTERS • LOCAL AREA NETWORK • VIDEO DISPLAY AND GRAPHIC TERMINALS

Our service capabilities extend throughout California

ATS
AUTHORIZED TECHNICAL SERVICES
477 Roland Way, Oakland, CA 94621

N C S N
MEMBER OF
NATIONAL COMPUTER SERVICE NETWORK

OAKLAND
(415) 638-4449

SAN JOSE
(408) 970-9860

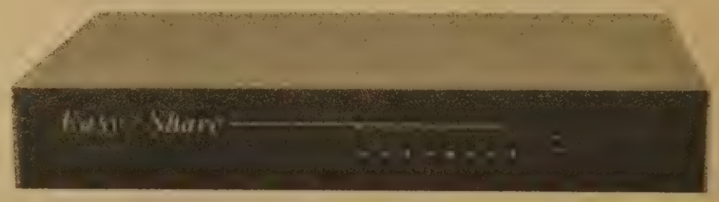
INGLEWOOD
(213) 568-8862

ORANGE
(714) 937-0332

SACRAMENTO
(916) 923-2944

PRINTER SHARING?

Easy-Share™

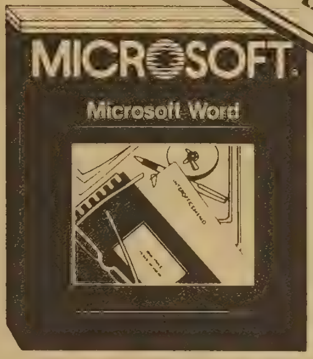


- 256K Buffer Expandable to 1 meg.
- 4 port standard expandable to 8 ports
- SERIAL or PARALLEL expansion
- Each port configurable as Input or Output
- Bidirectional MODEM/PLOTTER support
- 2 YEAR Warranty
- From $595

TANSTAAFL Co.
1800 Wyatt Drive, Suite 6
Santa Clara, California 95054
(408) 748-9330

Hear the Word!
See the Word!
Win the Word!

Special Price
Only $209



Suggested
list price
$450

Free Demonstrations of Microsoft Word 3.11

Drawing for free copy of Word 3.11 plus Microsoft Mouse (a $645 value!)

Friday, June 12, 8:30A.M. and 9:39A.M., Berkeley Marina Marriott
Wednesday, June 17, 8:30A.M. and 9:30A.M., San Francisco Hyatt Regency

---

Microsoft Word 3.11 for MSDOS personal computers is the state of the art word processor. By selecting it you can be assured that as your skills and printers improve you won't have to junk your word processor to take advantage of productive new technologies.

Full "WHAT YOU SEE IS WHAT YOU GET" Support: As graphical interfaces and desktop publishing become more prevalent, you need the support provided by Microsoft Word.

Enhanced Printer Support: Word 3.11 provides the most complete printer support in the industry. Now that IBM thas blessed desktop publishing, having a word processor that can really run in this brave new world will be more important than ever.

Full Networking Capability: What else would you expect from the company that created DOS and now OS/2? In addition, running on a network, files can easily be transferred between Word 3.11 and Microsoft Word for the Mac, as well as minis and mainframes. Word 3.11 also supports IBM's DCA protocol.

For Reservations, To Order Your Copy Of Word,
Or For Our Free Catalogue,Call 415 6443611

•FREE TECHNICAL SUPPORT • 1000'S OF PRODUCTS AVAILABLE •
•CORPORATE ACCOUNTS WELCOME•

800-SOFTWARE

940 Dwight Way, Berkeley, CA 94710 •

Irate dBASEr Challenges Osborne

This is in reply to the interview which you conducted with Adam Osborne in the April '87 *MicroTimes.*

We are a modest-sized software development firm located in central Los Angeles. We have published four commercial programs within the past 18 months; they mostly tend to be oriented along the same lines, i.e. for small businesses. Most of our programming is done in compiled *dBASE.*

Mr. Osborne has a reputation for having promoted the microcomputer industry, and deservedly so. The Osborne was a true innovation and the man must be given fair credit for the rapid growth of the industry which followed the introduction of that machine, in spite of its plastic case and painful display.

He shows his ignorance and rudeness, however, in describing *dBASE III* as a "crummy" language. Aside from the fact that *dBASE* has now sold more copies than any other language except BASIC, it is also the standard for performing plain, ordinary WORK in the business world. (Maybe Adam should try that some time? He might gain a different perspective!) I don't have statistics available, but I strongly suspect that more small businesses now use *dBASE III* than anything else. If so, then this alone makes it the people's choice.

At any rate, we at American Business Programs, (213) 660-8275, take strong exception to Mr. Osborne's callous remarks and insensitive attitude. For this reason, and on behalf of my colleagues and myself, not to mention *dBASE* programmers everywhere, I would like to challenge Mr. Osborne to put his money where his mouth is. We will compare the efficiency of any set of routines written in *dBASE*, designed to perform business functions, against those written in the language of his choice. Let an independent board of qualified reviewers, appointed by *MicroTimes*, decide the winner. (I will personally stake $1,000 on the wager, and suspect there may be others who might be interested in becoming involved.)

John Fremont
American Business Programs
Los Angeles

Osborne Replies

In response to your letter from John Fremont, I am pausing long enough from preparing a database program to be used by our Customer Service Department to take John Fremont up on his challenge. Within the next week or two we will send you six routines for Mr. Fremont to encode more efficiently, if he can, using *dBASE III*. When he sees the results I expect he will switch to *VP-Info.*

Adam Osborne
CEO, Paperback Software International
Berkeley

Stay tuned, readers. We'll keep you posted on this impending Battle Of The Databases . . .

—eds.

Another Businessman For Milburn

My colleagues in our computer-fortified investment underwriting firm join me in complimenting you for the recent appointment of Ken Milburn as a Contributing Editor.

His concise writing style and candid opinions add grist to your faithful readership. Beyond that is a touch of subtle humor. Who knows—Ken Milburn may become the Ben Franklin of our time with his charming "a keystroke saved is a few more pennies earned"?

James R. Corcoran, Jr.
Senior Partner
Boudreau & Associates
Palo Alto

Gee, we kinda like him too . . .

—eds.

MicroTimes, The Entrepreneur's Friend. . .

This is simply to thank *MicroTimes* for the mention you gave to our new product, the THiNgi Computer Copyholder, in your October 1986 issue.

Especially for a small company introducing a new product, such mentions provide a valuable promotional boost, and we appreciate the consideration you gave us.

We received a couple of dozen inquiries, several leading to orders, as a direct result of the mention . . . which can't be bad!

Sincere thanks.

Steve A. Jackson
Sum-Pro International Inc.
New Westminster, B.C.
Canada

Friendly UNIX. Honest.

To help out Eugene Katz (Letters, March 1987) regarding UNIX [Mr. Katz was having problems understanding the significance of Jan Lewis' **!chmod go + wx / uh / 31 / maddog / unixvs*.compars.readme**]; "chmod" is a UNIX command, "go + wx" is an option to that command; the rest of Jan's "command" is in fact a file name from a long way outside the user's current directory. I have seen quite a few things in this world that would seem "user-hostile" if the person describing it uses the method Jan Lewis used in her column—giving a command with a ridiculously long file name as if it too is part of the command.

The option of being able to use a command on a faraway file is a good *option*, and computers are *supposed* to be giving us options. I see that performing an operation on a file outside the directory like this has just been added to DOS; DOS has been steadily adding UNIX features like this. Maybe eventually DOS will be able to match UNIX feature for feature, but if you want those features, why wait?

UNIX has often been described badly to make it seem hostile—ironically often even by its promoters, who are usually dyed-in-the-wool computer crazies who feel they'll lose prestige if what they know seems too easy to learn. But UNIX can be learned *and* remembered if you get a manual which doesn't try to confuse but shows you how to use it. I've written one—*The Minimal Manual*—and it'll be out in a few months from Computer Science Press. *My* approach to UNIX is as a writer trying to help you use it. My book tells you that you don't have to be a programmer to learn UNIX—you don't have to be a plumber to take a shower.

Jim Moore
Santa Cruz

Mr. Moore's advice has been passed along to the mystified Mr. Katz, who was last seen poring over UNIX For People *while awaiting Mr. Moore's book.*

CORRECTION

We recently published a review of a program called *Handwriting Analyst.* Unfortunately, we printed an obsolete phone number for its publisher, Career Information and Software Associates in Berkeley. CIASA's correct phone number is (415)644-2771. Marilyn Maze of CIASA, who brought this matter to our attention, hastens to add that the program is now available in versions for Apple II and IBM.

Also, it was recently brought to our attention that a Buyers Guide listing in our December 1986 issue incorrectly listed the price of *Comic Strip Factory*, a Macintosh software product, as $9.95, when the price is in fact $99.95. (For further information about *Comic Strip Factory*, call 800/328-0184.)

We apologize for any inconvenience caused by these oversights.
—eds.

Letters are heartily encouraged. Send electronic mail to **microx** *on The WELL, (415) 332-6106. Send US Mail to 5951 Canning Street, Oakland, CA 94609. Please include your real name and the city where you live. Anonymous letters will not be printed.*

Technoland Complete 286 System

- 80286 CPU
- 512K on Board
- Teac 1.2 MB Drive
- 200W Power Supply
- AT Style Keyboard
- Western Digital HDD/FDD Controller
- Monochrome Monitor w/Graphic Card
- MS DOS 3.1 w/Manual
- 1 Year Warranty

$999

Technoland Complete XT-Turbo System $599
Complete 286 System, 12MHz 0 Wait State $1549

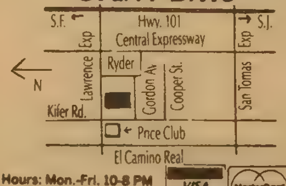
SAMSUNG NEC MULTISYNC CASPER EVEREX CITIZEN Seagate TEAC WordPerfect CORPORATION

NEC Multisync $555
EPGA $799
EGA Monitor 640*350 .... $360
EGA Short Card $199
Color Graphic Card $69
Color Monitor 640*200 .... $265
Monochrome Monitor $79
Mono-Graphic Card $59
Seagate Hard Disk ....
ST225 20MB Hard Disk $270
ST225 20MB Kits w/controller software $325
ST238 30MB Kits w/controller software $379

ST4038 30MB Full Hght HDD $565
ST4051 40MB Full Hght HDD $659
TEAC 360K Floppy $90
TEAC 1.2 MB Floppy $119
Fujitsu 360K Floppy $75
Full line Citizen Printer ....
(All printers w/free cable)
Citizen 120D $179
MSP-10, MSP-20 .... $289/$329
MSP-15, MSP-25 .... $399/$479
Full Line Everex Products . . . .
Everex 1200 Modem $99
Everex 2400 Modem $199
Everex Mini I/O AT/XT $79

Irwin Tape Backup $379
5060 Keyboard 84 Keys $55
5339 Keyboard 100 Keys $79
Word Perfect $209
Generic CADD $56
Norton Utility $82
Diskette Box (100 Pos) $7.99
Maxell DS/DD $9.99
IBM Compatible Mouse $59
LogiMouse $79
Computer Books
Computer Connectors
Video products
From .... 99¢

OPEN 7 DAYS



Hours: Mon.-Fri. 10-8 PM
Sat.-Sun. 10-5 PM
VISA MasterCard

Technoland
The Computer Super Market
Tel. Info. 408-732-2244
Tech 408-732-6690
2960 Gordon Avenue
Santa Clara, CA 95050

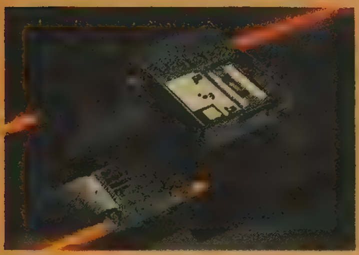
Free Memorex Diskette
(DS/DD, Box of 10)
With Any Purchase
Over $200
Expires 6/16/87

Automatic Backup Protection

. . . From Top-Notch Everex SCHEDULER™

- Automatic Scheduler™ for unattended backups
- File restore from image backup or file backup
- Backup across networks (using logical image or file-by-file)
- Physical image backup/restore of local disks
- Logical image backup/restore of local or remote disks
- File backup from any local or remote disk of any file size
- File-by-file and image backup on the same tape
- Multiple tapes to support unlimited backup capacity
- Multiple datasets for multiple backups on the same tape
- Tape sequence management recorded on the tape
- Menu-driven hardware configuration guide
- Backup any disk whether formatted for DOS or not
- Escape to DOS while in backup/restore operation
- File selection from directory listing or command line
- Context sensitive on-line help
- Dynamic display of tape status
- Multiple windows (nestable and movable)
- Extensive diagnostics

INDUSTRY STANDARD QIC-24 DATA FORMAT



$775 Excel Stream 20 Internal

$1195 Excel Stream 60 Internal

$1335 Excel Stream 60 External

$885 Excel Stream 20 External

$1295 Excel Stream 60 External

$925 Excel Stream 60-8 External

Utilize the features. Compare the performance. Count on our commitment to Excellence. Enjoy the Everex Protection TODAY!

For the name of your nearest EVEREX dealer or more information, call us. Remember...
We're EVER for EXcellence.™

1-800-821-0806
in U.S.

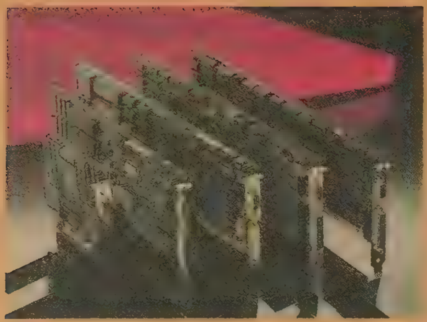
1-800-821-0807
in California

48431 Milmont Drive, Fremont, CA 94538
415-683-2100

EVEREX
EVER for EXcellence

EVEREX, EVER for EXcellence, Stream 20/60/60-8 and Scheduler are trademarks of Everex Systems, Inc., ©1987 Everex Systems, Inc. All rights reserved.

Discover The
Quality, Features,



GRAPHICS

EPGA - Professional Graphics Adapter

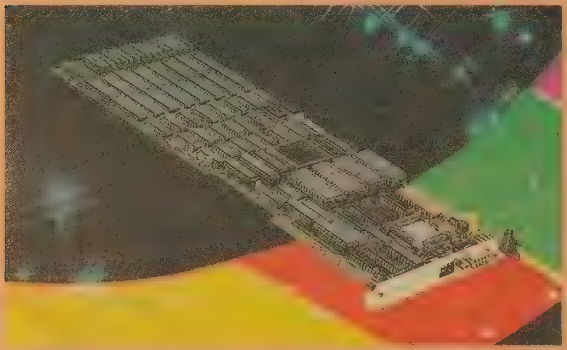
- Compatible with the IBM* PGC
- Fits into a single slot
- Displays 640x480 graphics in 256 colors
- Emulates CGA, Hercules* and MGA modes

Micro Enhancer

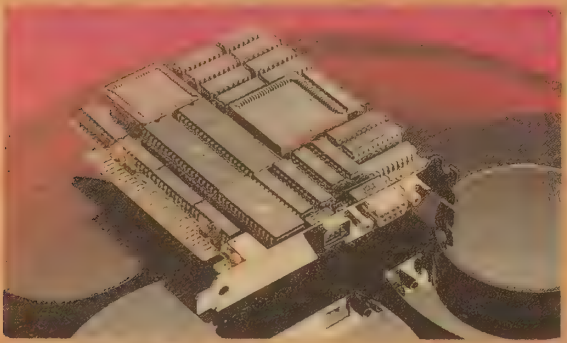
- Compatible with the IBM EGA
- Supports 640x350 graphics in 16/64 colors
- Half card fits in a short slot
- Emulates Hercules and CGA modes

Everex Edge

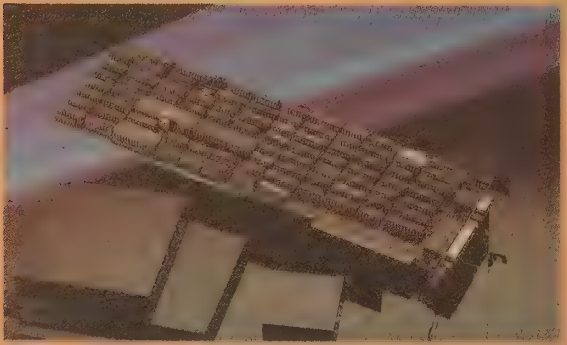
- Displays 320x200 graphics in 16 colors
- Runs HGA 720x348 monochrome graphics
- Runs Lotus 1-2-3* and Symphony* in 132 columns
- Parallel port and light pen connectors



EPGA



Micro Enhancer



Everex Edge

STREAMING TAPE

Excel Stream 20

Excel Stream-60

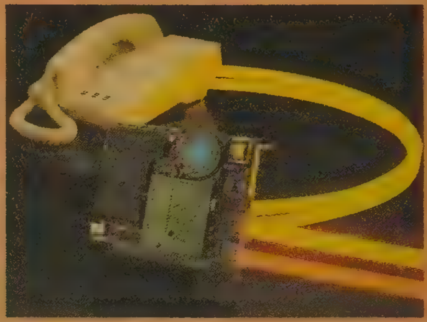
Excel Stream 60-8

- 60MB cartridge Backup
- 20MB cassette Backup
- Automatic Scheduler
- File Restore from Image backup
- Backup across networks
- 5MB/min speed
- Multiple datasets and tapes
- Image and File records on the same tape
- Context sensitive help
- Nestable and movable windows
- Extensive diagnostics
- Easy installation program

Excel Stream-20

Excel Stream-60

Excel Stream 60-8



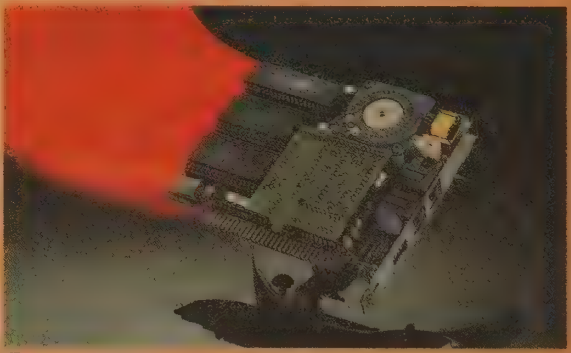
COMMUNICATIONS

Evercom 24 Modem

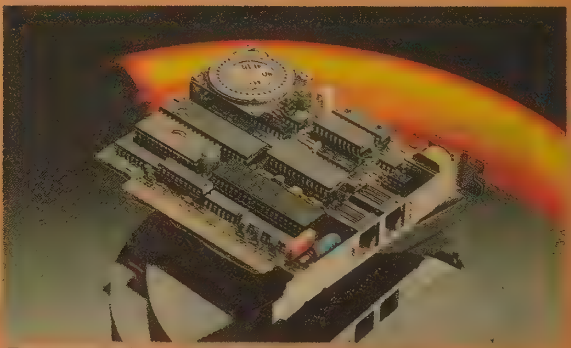
- International operations at 2400 bps
- Compatible with Hayes* AT command
- Bell 212A/103 and CCITT V.22/V.22bis compatible
- Adaptive equalization
- Automatic answer and voice/data switching
- Phone off-hook detect
- Runs in slot 8 of IBM XT*
- Runs with multi-line phones

Evercom 12 Modem

- 300/1200 bps speed on a short card
- Hayes and Bell 212A compatible
- Supports tone and pulse dialing
- Automatic answer and voice/data switching
- Bitcom software included



Evercom 24



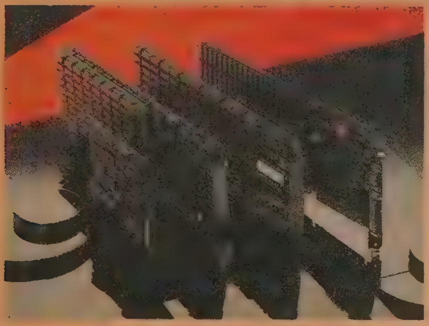
Evercom 12

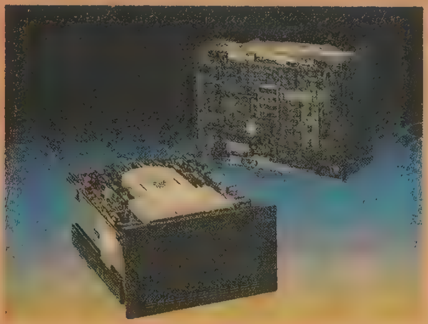
Evercom

EVEREX, EPGA, Micro Enhancer, Everex Edge, Excel Stream-60/20/60-8, Evercom 24, Excelerator, RAM-3000, Magic Card 16, and EVER for EXcellence are trademarks of EVEREX Systems, Inc., IBM and IBM AT are registered trademarks and IBM PC and XT are trademarks of International Business Machines Corporation. Hercules is a trademark of Hercules Computer Technology. Lotus 1-2-3 and Symphony are registered trademarks of Lotus Development Corporation. Hayes is a registered trademark of Hayes Microcomputer Products, Inc.. UNIX is a registered trademark of AT&T Bell Laboratories, and XENIX is a trademark of Microsoft Corporation.©1987 EVEREX Systems, Inc. All rights reserved

Everex Difference

Price and Performance.





MULTIFUNCTION

Excelerator

- 80286 8MHz processor replaces 8088 on PC/XT*
- 33% faster than standard IBM AT®
- Add up to 640K of cache RAM memory
- Socket for 80287 math coprocessor

Magic I/O

- I/O plus clock/calender
- For XT/AT and compatibles
- Serial ports COM1-COM-4
- Parallel ports LPT1-LPT3
- Software included

Magic Card 16

- Up to 2MB of extended memory for AT
- Flexible memory addressing
- Configurable parallel and serial ports

HARD DISK DRIVES

Everdrive 20MB External

- Half-height, 20MB formatted capacity
- ST-506/ST-412 interface
- 65 msec average access time
- Dedicated head shipping zone

Everdrive 40MB Internal

- Half-height, 40MB formatted capacity
- 40 msec average access time
- ST 412 interface
- 20,000-hour MTBF

Everdrive 72/80MB External

- 72/80MB formatted capacity
- 30 msec average access time
- 20,000-hour MTBF
- 25-5 Watts power consumption

OEM PRODUCTS

EV-826 Tape Formatter

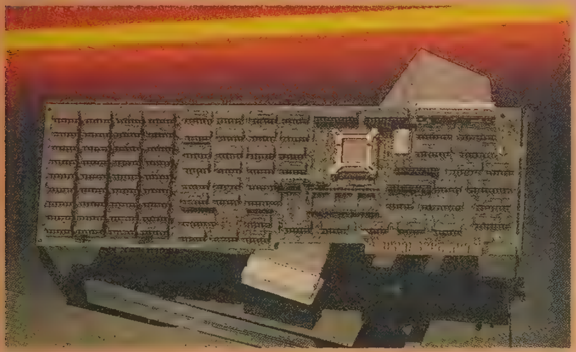
- Onboard 8K RAM for data buffer
- Standard QIC-36 drive interface
- QIC-02 interface for host adapter

EV-332 Hard Disk/Floppy Controller

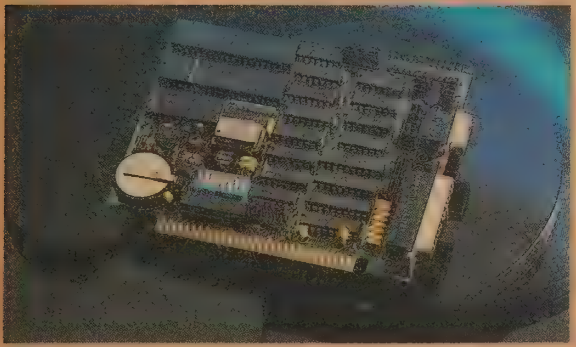
- Reduced height
- ST506/412 interface supports 2 hard drives
- 2:1 interleave factor
- 32 bit ECC
- Supports 2 floppy drives

EV-1800 AT Mother Board

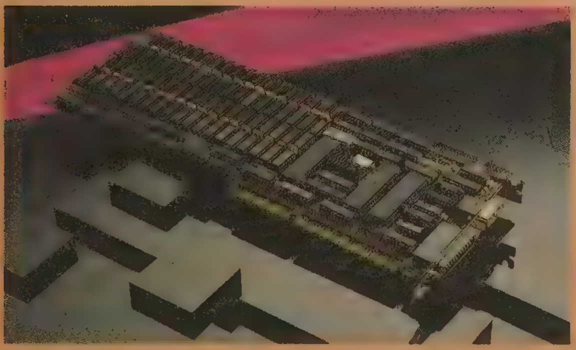
- 10MHz zero wait state 80286 CPU
- 512K RAM, expandable to 1MB
- Six 16-bit and two 8-bit slots
- I/O ports and clock calendar



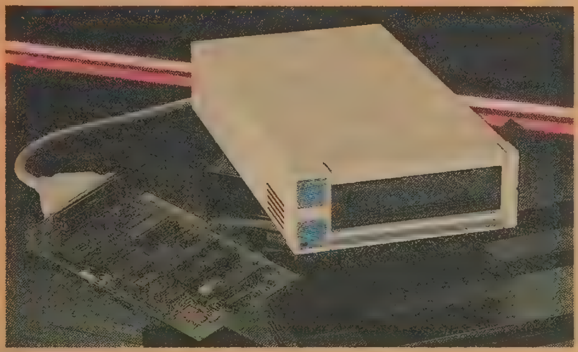
Excelerator



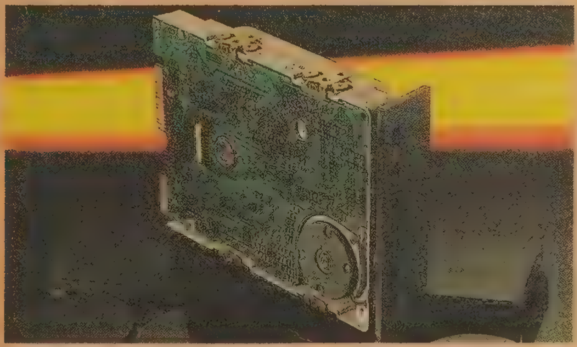
Magic I/O



Magic Card 16



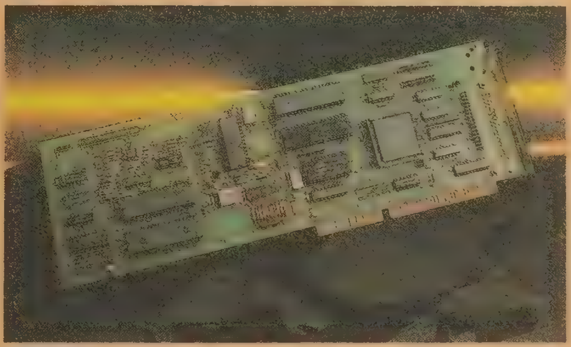
Everdrive 20MB External



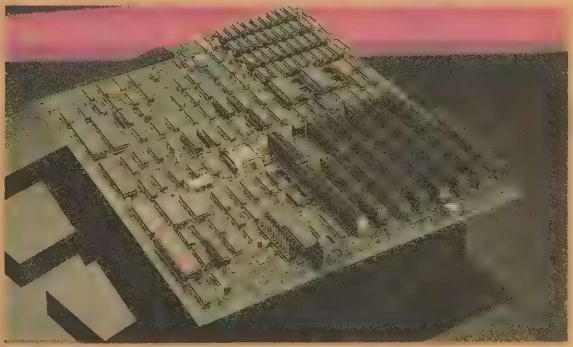
Everdrive 40MB Internal

Everdrive 72/80MB External

EV-826



EV-332



EV-1800

EVEREX
EVER for EXcellence

48431 Milmont Dr. Fremont, CA 94538
415-683-2100 1-800-821-0806 (U.S.) 1-800-821-0807 (in CA)

Diamond Brings You These Exceptional Add-on Products for Lotus 1-2-3®

Lotus HAL™

Lotus HAL is a memory resident program that works with 1-2-3 to create and manipulate 1-2-3 spreadsheets. Using English-like "requests," HAL tells 1-2-3 what to do, not how to do it. Simplifies any task from creating cells and formatting, to moving data, sorting and making graphs.

$103.

Lotus Express™

Lotus Express for MCI Mail™ is PC communications software that allows users to send and receive both electronic mail messages and PC files quickly and easily. Express is easy to learn and use, featuring a familiar Lotus interface and on-line help. Messages and files are transported over the worldwide MCI Mail network; delivery options include electronic, paper mail, courier and telex.

$72.

Lotus Metro™

A memory resident software program that gives you the same control over time that 1-2-3 gives you over your numbers. It includes: an editor, a clipboard for moving data between programs, a calendar, a phone book with auto dialing, a calculator, a watch, a macro program, list manager, a DOS® file manager and much more.

$58.

123® Report Writer™

1-2-3 Report Writer allows users to use customized reports, mailing labels and forms from 1-2-3 and Symphony™ files. Also includes Query and Sort functions to maximize the flexibility of the database.

$67.

Lotus®

Trademark Owners: Lotus, Lotus 1-2-3, 1-2-3 Report Writer, Symphony, Lotus Metro, Lotus Express and Lotus HAL are trademarks of Lotus Corporation. DOS is a trademark of Microsoft Corporation. MCI and MCI Mail are trademarks of MCI Corporation. Prices are subject to change without notice.

In addition to Diamond's Best Buy, our huge inventory of business software and peripherals is available to your company now at highly competitive prices. Our sales and technical professionals are ready to provide your company with the service and support you need. If Diamond isn't on your vendor list, you are missing one of corporate America's best resources.

(415) 633-2588

Diamond Software
7916 Capwell Drive, Oakland, CA 94621

On The Firing Line

PostScript—Becoming An Industry Standard

By Stephan Wickham and the Diamond Software Technical Team

We at Diamond Software have just completed a series of shows presenting page description languages and desktop publishing. We are very honored to have been selected to give these educational presentations in front of top computer management people from companies such as IBM, Hewlett-Packard, Burroughs, Fujitsu, Amdahl, Bechtel, United Airlines and many more. In addition, we were also invited for the second year to give the computer presentation for the annual show of the American Society of Military Controllers, at which we presented desktop publishing for the first time before a large military management group.

Adobe Systems' PostScript page description language has become the pivot point for all our new desktop publishing presentations. PostScript will be adopted as a widely used standard, a development that seems likely in view of recent information from government and corporate sources.

PostScript—What It Is And Why You Need It

Currently, the key to current high-end text and graphics output is PostScript, a device-independent page description language developed by Adobe Systems. The PostScript interpreter software resides in PostScript-equipped laser printers and enables them to perform a very wide spectrum of tasks—e.g. rotate text, texture, pattern, halftone and reproduce images in any size and shape. PostScript is quickly becoming a universal standard for users requiring high-quality output; educated users will make sure that their software outputs PostScript control codes and that their printer has a PostScript controller. Look for PostScript in your products, as it is a sign that the manufacturer is staying abreast of current popular technology.

PostScript will not work with just any laser printer. PostScript requires a powerful controller (most often with a Motorola 68000 series CPU) which is built into the printer by the manufacturer. There's a growing variety of PostScript typesetters and laser printers at a wide range of prices and speeds. Our favorites are by Texas Instruments.

A great advantage of PostScript is its device independence. This allows you to use output devices with the quality you need for particular jobs. The great majority of PostScript laser printers are 300 dpi (dots per inch) producing what we call "near-typeset" quality. For business correspondence and a great many corporate publications this is just fine, but the same document can be sent to a PostScript typesetting machine without any changes.

"Typeset quality" is commonly defined as at least 1000 dpi. Linotype currently has two PostScript typesetting machines: the Model 100 at 1270 dpi and the Model 300 at 2540 dpi. We suggest that you take your output on disk to a typesetter that is equipped with one of these new machines when your requirements call for "publication quality." Larger companies might consider installing a Linotype PostScript typesetter in-house. The rest of you need not worry, as studios are opening up around the country that have this new equipment; the output rates are quite reasonable given the high quality of the finished output. It is important to remember that your output will go into the typesetter without your having to make any changes to accommodate the more complicated technology.

One of the beauties of PostScript is that you can concentrate on the image on your screen and not have to be to concerned with making your output device work. The hard work is done for you by the software-hardware system; you can just relax and expend your efforts on the important design aspects of your project. The key point here is that higher quality is obtained without the expenditure of any additional effort other than choosing a different output device. To the great mass of you out there who've worked with printer drivers and escape codes, this is surely a blessing.

PostScript Software

The number of software packages that can output to PostScript devices is growing at an enormous rate. Software is available in Apple, IBM PC, minicomputer and mainframe environments.

In the IBM PC software market, many packages are beginning to have PostScript drivers. In the area of word processing look for Microsoft *Word* by Microsoft Corporation, *WordPerfect* 4.2 by WordPerfect Corporation, *Xywrite III* by XyQuest and *Manuscript* by Lotus Development Corporation. In the area of desktop publishing packages, the top three IBM PC products supporting PostScript are *PageMaker* by Aldus Corporation, *Ventura Publisher* by Xerox Corporation and *Harvard Professional Publisher* by Software Publishing Corporation. You will find that the two IBM PC windowing environments, Digital Research's *GEM* and Microsoft's *Windows*, provide a universal environment for all software that can work with either system. In the area of presentation graphics look for Microsoft's *Chart*, Micrografx's *Windows Draw*, Software Publishing's *Harvard Presentation Graphics* and Lotus' *Freelance Plus*. Data management software supporting PostScript is available with Javelin Software's *Javelin* and *Windows Filer* from Palantir Software.

This is just a very partial list of what's currently available for a PostScript environment. Call us and we would be glad to tell you if your favorite software supports or will support PostScript.

Adobe Type Library

Look for the Adobe Type Library by Adobe Systems for your additional PostScript font needs. They can provide you with a wide variety of high-quality typefaces for use with PostScript printers and typesetters. We are most impressed with the fact that Adobe Systems typefaces are licensed from the highly respected and world-renowned Mergenthaler and International Typeface Corporation (ITC) type libraries. There are currently over 125 typefaces, and this has been growing at the rate of 25-40 new typefaces every quarter. The Adobe Type Library comes in a downloadable format and is an extension of the typefaces built into all PostScript printers. The Adobe Typefaces are currently available for Apple Macintosh, and will be released in the very near future for IBM PC.

Adobe Illustrator

Adobe Systems has also released a software package called *Adobe Illustrator* for producing illustrations and high quality line art. This graphics package uses speed and mathematical precision to give you fine drawing with the Apple Macintosh that's comparable to drawing by hand. This package should not be confused with the "paint" programs that currently abound on the market—it is really something quite different.

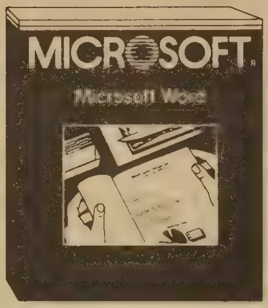
The *Adobe Illustrator* addresses the Macintosh screen with PostScript. In this regard it is quite novel, and it should signal the beginning of programs that address display monitors in this manner. The *Adobe Illustrator* uses precise curves and lines to describe drawings. The user can create original illustrations or "trace" someone else's existing artwork. A very popular method is to scan in photographs, logotype, blueprints and drawings through a scanner, transfer the image to your computer and then convert the image to line-art within *Adobe Illustrator.* The final product is professional, and the art produced can be used by itself or put into other applications, such as Aldus' *PageMaker.*

Instead of building a drawing with dots (which is rather crude), *Adobe Illustrator* uses its unique and powerful pen tool to "trace" shapes, after which you can then fill in selected parts of the image, adjust lines to preferred weights and even add captions.

Adobe Illustrator makes it easy to move or change objects, zoom in to see detail and even preview a drawing before printing on your PostScript printer. *Adobe Illustrator* makes computer-assisted illustrations of professional quality available to the masses for the very first time. By using *Illustrator,* your drawings, technical illustrations, designs, logos, and maps could be produced three to four times faster than your current traditional methods allow.

This package must be seen to be believed. This is reason enough to buy an Apple Macintosh, but my IBM friends can rest assured that in Adobe's labs someone is thinking about them. Look also for announcements in the near future about color output devices supporting PostScript. Adobe products are available through Diamond Software and carry the seal of "corporate quality."

Special Diamond prices on these high performance products from Microsoft®

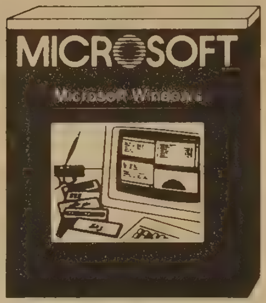


Word 3.1

Now features
the Word Finder™
Thesaurus

$239

A true productivity tool, Microsoft Word Release 3.1 for the IBM® PC and compatibles now features the Word Finder Thesaurus, outline processing, automatic numeric and alphabetic sorting, index and table of contents generator, and font downloading to take advantage of the full features of the latest laser printers.



Windows

Includes RAMDrive™
and several desktop applications

$69

Microsoft Windows increases efficiency by allowing you to switch between programs with ease and to rapidly move information from one program to another. Windows includes several utility programs like RAMDrive, which along with memory expansion cards, ignores the 640K limits of the PC.

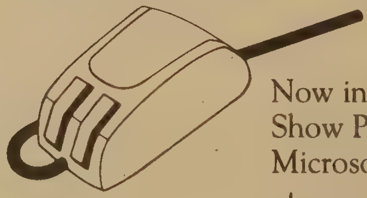
QuickBASIC Compiler

Accelerate Basic
interpreter programs
up to 10 times

$69

Now you can accelerate your BASIC interpreter programs by as much as 10 times – all with hardly any changes. Use the music, sound effects and graphics in your programs that you could with the BASIC that came with your IBM PC.

Bus Mouse 6.0



Now includes
Show Partner™ and
Microsoft Paintbrush®

$125

Just put your finger on a Microsoft Mouse and you'll be getting more done in no time. And with Show Partner and Microsoft Paintbrush, you can create exciting presentation graphics for sales reports, product demonstrations, slide shows and more.

Trademark Owners: Microsoft, RAMDrive, the High-Performance Software/ Microsoft Corporation; IBM International Business Machines Corp.; Word Finder/Microlytics Inc.; Show Partner/Brightbill-Robert and Company Ltd.; Paintbrush/ZSoft Corporation. Prices subject to change without notice.

MICROSOFT®
The High Performance Software™

In addition to Diamond's Best Buy, our huge inventory of business software and peripherals is available to your company now at highly competitive prices. Our sales and technical professionals are ready to provide your company with the service and support you need. If Diamond isn't on your vendor list, you are missing one of corporate America's best resources.

(415) 633-2588

Diamond Software
7916 Capwell Drive, Oakland, CA 94621

LATE-BREAKING NEWS

By Patricia Lesser

Aldus Distribution Agreements

Aldus Corp. (Seattle, WA) has announced a worldwide software distribution agreement with IBM, under which IBM will include *PageMaker* software as part of its new SolutionPacs for personal publishing. In addition, Aldus has initiated a new corporate support and training program. Aldus announced a second, exclusive, distribution agreement with Microamerica, marking the first time the company has worked with a North American distributor, and the first time that Microamerica has distributed a software line.

Apple Computer-Northern Telecom Networking

Apple Computer (Cupertino, CA) has implemented the second phase of a strategic alliance program with Northern Telecom, and has announced four new networking capabilities: linking separate AppleTalk networks; "dial-up" remote use of LaserWriter printers; "one step" file transfer and conversion; and Memorybank 485, a new 485 MB storage subsystem for use with the Macintosh family.

Autodesk Update

Autodesk, Inc. (Sausalito, CA) has a new driver update disk for *AutoCAD*, which will be included in all future shipments of version 2.52 of that program. Upgrade for current owners is $80.

Autodesk has also reached a settlement with three Fortune 1000 companies who produced illegal copies of *AutoCAD* for in-house use. The companies agreed to settle out of court, to pay penalties for undisclosed amounts, and to correct abuses or infringements in return for guaranteed anonymity. Autodesk has also finalized its acquisition of Cadetron, Inc. (Atlanta, GA).

Autographix/Compugraphic Workstations

Autographix (Waltham, MA) and Compugraphic Corp. (Wilmington, MA) jointly demonstrated their new IBM PC-based presentation graphics workstations at NCGA in Philadelphia. The systems, fully configured with film recorders, printers and Autographix Instant Capture System, can be used to create 35mm slides, overhead transparencies, color prints and black-and-white copy.

Bizcomp Cuts Modem Prices

Bizcomp Corp. (Sunnyvale, CA) has reduced the price of its NonRisk modems by up to $100. The IntelliModem XT and ST models are now $449.

News From Brøderbund

Brøderbund Software (San Rafael, CA) announced that Edmund Auer will join the company as senior vice president and chief operating officer. Prior to joining Brøderbund, Auer was president of CBS International Publishing in New York and CBS Software in Greenwich, CT.

Brøderbund also announced an affiliated label agreement with MacroMind, Inc., a Chicago-based publisher of software for the Macintosh computer. The agreement involves *VideoWorks II* and future *VideoWorks* products.

Franklin Drops Suit

Central Point Software (Portland, OR) has announced that Franklin Computer Corp. has dropped its motion for a preliminary injunction against sales of the Laser 128 personal computer. Franklin had charged that the Laser 128's boot code infringed on Franklin's boot code. As part of the court order, Franklin has agreed not to contest the new boot code in the Laser 128 in any forum, including US Customs.

Microsoft, Brøderbund Dominate SPA Awards

Fluegelman Award To Fido Author

At a gala black-tie event emceed by Douglas Adams and entertained by Robin Williams, the Software Publishers Association presented its 1986 Excellence In Software Awards on March 26. Commented executive director Ken Wasch, "The winners are truly representative of the exemplary products of this diverse industry."

Microsoft and Brøderbund were the big winners, Microsoft for *Works* and the Macintosh *Flight Simulator*, Brøderbund for *The Toy Shop* and *Where In The USA Is Carmen Sandiego*. Springboard Software also won two awards for *The Newsroom Pro*.

At the same ceremony, the first Andrew Fluegelman Award was presented to Tom Jennings, president of Fido Software and author of its popular BBS software *Fido/Fidonet*. Founded in honor of the late Andrew Fluegelman, creator of the Freeware™ marketing concept, the award recognizes a software programmer who is deemed to have made a substantial and innovative contribution to the personal computer community with commercial, shareware, or public-domain software. Jennings was chosen from a field of finalists which included Gary Pope for *DESQview*, Jeff Harbers for *Excel*, Scott Watson for *Red Ryder*, Jim Anderson for *Smalltalk/V*, and Michael Pflaumer for Centram's *TOPS*.

MicroTimes would like to extend hearty congratulations to this year's award winners.

SPA Excellence In Software Award Winners

Best Software Program
Works—Microsoft

Best Entertainment
Chessmaster 2000—Software Toolworks

Best Business Productivity Tool
Works—Microsoft

Best Creativity Program
The Toy Shop—Brøderbund Software and Active Arts

Best General Education Program
Where In The USA Is Carmen Sandiego?—Brøderbund Software

Best Home Productivity Program
The Newsroom Pro—Springboard Software

Best Simulation Program
Mean 18 Ultimate Golf—Accolade, Inc., and Microsmiths, Inc.

Best Utility Program
Referee—Persoft, Inc., and Ed Harris

Best Secondary School Education Program
Homeworker—Davidson & Associates

Best Programming Tool
Dan Bricklin's Demo Program—Software Garden and Dan Bricklin

Best Primary School Education Program
Where In The USA Is Carmen Sandiego—Brøderbund Software

Best Concept
The Toy Shop—Brøderbund Software

Best Technical Achievement
GEOS 1.2—Berkeley Softworks

Best Sound
The Music Studio (Amiga)—Activision and R. Parfitt of Audio Light

Best Graphics (16 bit)
Defender Of The Crown—Mindscape and Master Designer Software

Best Graphics (8 bit)
Airheart—Brøderbund Software and Dan Gorlin Productions

Best User Interface
Lotus HAL—Lotus Development Corp., B. Gross, L. Gross

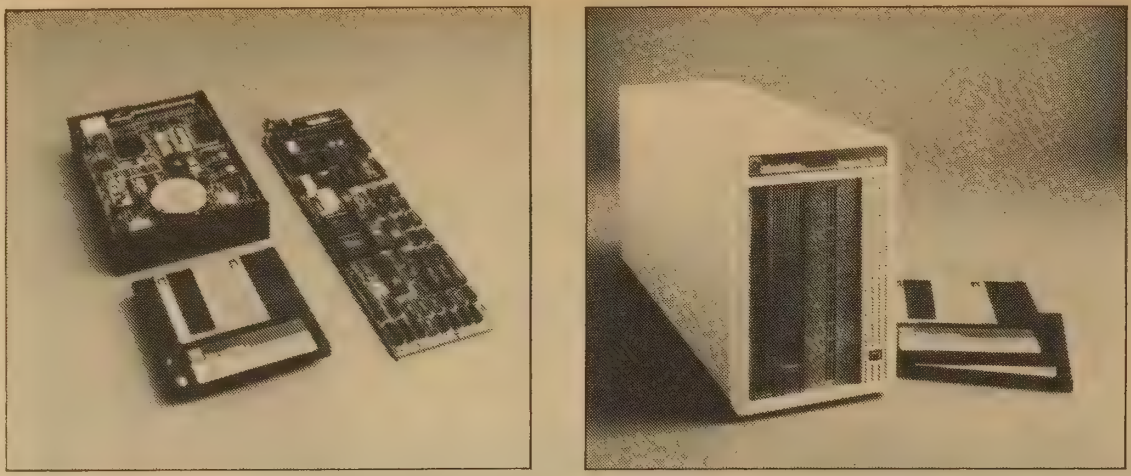
Best New Use of a Computer
The Toy Shop—Brøderbund Software and Active Arts

Best Adaptation to a New Computer Format
Flight Simulator (Macintosh)—Microsoft and Sublogic

Best New Version of a Program
Deluxe Paint II—Electronic Arts and Dan Silva

Best Documentation/Manual
The Newsroom Pro—Springboard Software

Best Software Packaging
Leather Goddesses Of Phobos—Infocom and Steve Meretzky



Mountain's Bernoulli Drives

Mountain Computer (408/438-6650) introduced its first Bernoulli offerings, a line of internal and external drives using 5 1/4 inch 20 MB removable cartridges. The new Micro Bernoulli single cartridge drives are compatible with most IBM PCs and clones, and fit into the unit's half-height drive slots. External models are designed to fit alongside the monitor on top of the computer. Average seek time is 40 ms. Pricing ranges from $2,195 to $2,395.

Mountain's new Bernoulli drives offer compact, efficient storage.

New VP At Digital Research

Digital Research (Monterey, CA) has appointed Marily Bohl as vice president of product development. For the past 13 years, Ms. Bohl has been with IBM as manager of advanced database development.

IBM Bars Matsushita Computers From US

IBM has stopped Matsushita Electric Industries of Japan from exporting to the US an AT compatible computer which allegedly infringes on IBM's BIOS copyright. The Japanese company is expected to not only withdraw all remaining machines from the market, but to pay IBM nearly $2 million as recompense.

Letraset Launches Desktop Publishing Campaign

Letraset USA (Paramus NJ), marketer of *Ready, Set, Go! 3* desktop publisher for the Macintosh, is seriously attempting to become a major competitor in the desktop publishing market. Letraset is competing directly with Aldus through an ad campaign telling users that if they send in the front cover of the *PageMaker* User's Manual, they will receive *Ready, Set, Go! 3*. And a sweepstakes, to continue through July 1, offers an '87 Porsche as the grand prize (other prizes include a Mac Plus, Radius monitors, Data Frame external hard disk drives and copies of *Ready, Set, Go! 3*).

Microsoft Plans for New Generation

Microsoft Corp. (Redmond, WA) has implemented a company strategy that revolves around IBM's new product announcements. Five fronts guarantee a steady progression path for developers and users alike:

1) to develop a new operating system, MS OS/2, that takes full advantage of the 80286/386 microprocessors;
2) to ensure that the installed base of applications running under MS-DOS will also run under the NS OS/2 in the "compatibility box";
3) to continue enhancements and product development for MS-DOS;
4) to provide a new-generation graphical interface;
5) to provide sophisticated new-generation networking compatible with current Microsoft networks.

Very Competitive Bootleg DOS Halted

Microsoft (Redmond, WA) filed a copyright infringement action in the Northern California Federal District Court, and obtained a preliminary injunction prohibiting three Taiwanese companies and a California company from copying, importing, disseminating, or distributing Falcon MS-DOS. The ruling follows Microsoft's seizure of approximately 50,000 copies of Falcon MS-DOS imported into the US since the beginning of 1987. (The first 15,000 copies of the illegal software were confiscated in a Bay Area raid on February 15). Manufactured in Taiwan by VCCP (Very Competitive Computer Products Corp.) and Evergood Computer International Corp., both Taiwanese firms, the infringing product was imported into the US by (or through) Wetex International (USA) Corp., a California firm.

Another Mindscape Acquisition

Mindscape, Inc. (Northbrook, IL) announced an agreement in principle with Holt, Rinehart and Winston, Inc., to purchase most of its HRW educational software, formerly known as CBS Interactive Learning. The proposed transaction marks Mindscape's third acquisition within the last nine months and makes the company one of the largest educational software publishers in the US.

The popular Certificate Maker is now available in a Macintosh version.

Certificate Maker for the Mac

Springboard Software, Inc. (612/944-3915) has released a Macintosh version of its highly popular *Certificate Maker* and *Certificate Library Volume 1*. Together, these programs provide the user with more than 300 pre-designed certificates, awards, diplomas and licenses covering everything from academics, business, and athletic achievements to activities involving family and friends. ($59.95)

More Look And Feel

It seems that Mosaic Software (Cambridge, MA), in preparing its defenses against the Lotus Development suit, has received a favorable decision from an Atlanta District Court, which ruled that "copyright protection of a computer program does not extend to screen displays generated by the program."

This decision was made in the Digital Communication Associates versus SoftKlone Distributing Corp. suit. In the SoftKlone case, the court also ruled that although the defendants infringed the plaintiff's copyrighted "main menu" screen, the defendants were free to design "a program which accepted all of the same commands utilized" in the plaintiff's program.

Nestar Intelligent Access Acquisition

Nestar Systems, Inc. (Mountain View, CA), a subsidiary of DSC Communications Corp., announced the acquisition of Intelligent Access. The terms were not disclosed. Together, the companies will offer users an expanded group of productivity tools and innovative processing methods to meet increasing PC disk product and networking demands. Included will be an intelligent token-ring based network interface, a high performance token-ring local area network for small or entry-level users, and an intelligent disk controller to allow for parallel processing on an IBM or compatible PC.

Okidata Microline Rebate

Okidata (Mt. Laurel, NJ) has announced a $100 rebate wih the purchase of a Microline 292 or wide carriage Microline 293 dot matrix printer.

New COO At Samna

Samna Corp. (Atlanta, GA) has named Marc Bailey president and COO. He comes to Samna from Informatics Legal Systems, a Phoenix-based developer of software for law firms.

Silicon Merger

Silicon Compilers, Inc. (San Jose, CA) and Silicon Design Labs (Liberty Corner, NJ) announced that their boards of directors have approved a merger agreement. The new company will be called Silicon Compiler Systems Corp.

monarch computers

863c San Pablo Ave. • Berkeley, CA 94706
Corporate & Retail Sales **(415) 526-7741** M-SAT 9:30-6:00

MICROSELL

1090 Heinz Ave. • Berkeley, CA 94710
Wholesale Sales **(415) 540-5313** M-F 9:30-5:00

ALL PRICES CASH/CASHIERS CHECK (VISA M/C ADD 3%)
PRICES SUBJECT TO CHANGE ANYTIME WITHOUT NOTICE

CALL FOR BEST PRICES

Monochrome Harddisk System

Leading Edge Model D
512K, 1 Drive
20MB Hard disk

$1299

LEADING EDGE®
AUTHORIZED RETAIL DEALER

LEADING EDGE® MODEL "D"™ PC

- Dual Double Sided Double Density Disk Drives
- 512K expandable to 768K on Motherboard
- Monochrome and Color Graphics Output
- Four Open Expansion Slots
- High-Resolution Monochrome Monitor
- Selectric-Style Keyboard
- Parallel and Serial Ports. Clock Calendar
- Fifteen Month Warranty
- Lifetime Toll-Free Technical Support
- 20/30/40MB Harddisk Available
- IBM® Compatible

NOW 7.16 Mhz SPEED

Price & Performance • An Outstanding Value

Leading Edge is a Registered Trademark of Leading Edge Products Inc.
IBM is a Registered Trademark of International Business Machines Corp.
Model "D" is a trademark of Leading Edge Products, Inc.

IBM XT

1 Drive, 256K
$995

IBM AT

1 Drive, 256K
$2349

LAPTOPS

TOSHIBA

T3100 PLUS $2995
T1100 PLUS $1649

NEC

Multispeed $1450

ZENITH

Z-181, 2 Drive 640K $1775
Z-171, 2 Drive 640K $1595

HP LASERJET

LASERJET 11
$1799

MONITORS

Sony Multiscan,
NEC Multisync,
PGS, Amdek,
Packard Bell,
Samsung

EPSON®

WE WILL MATCH ANY LEGITIMATE ADVERTISED PRICE ON EPSON PRINTERS, IN THE BAY AREA. FREE DELIVERY IN SAN FRANCISCO, OAKLAND, BERKELEY DOWNTOWN AT COMMERCIAL LOCATIONS ONLY.

PRINTERS LOW!

EPSON, OKIDATA, TOSHIBA, NEC, DYNAX, IBM,

PANASONIC, C-ITOH, HP

DRIVES & TAPE B/U

SEAGATE, ST225, ST238, ST251, ST4038, ST4051, ST4096, MINISCRIBE, MS3425, MS6053, MS6085, 30MB HARD CARDS, MOUNTAIN & PLUS HARD CARDS, IRWIN, TEAC, ALLOY TAPE BACKUPS,

HARD CARD 20MB
$399

SOFTWARE/BOARDS/MISC.

WORDPERFECT, DBASE, LOTUS, WORDSTAR,

BORLAND, PAPERBACK SOFTWARE, MICROSOFT,

AST, INTEL, HAYES, VEGA, GENOA, EVEREX

COMPAQS

DESKPRO 286

12Mhz, 640K, 1 Dr, 20MB Hard disk, Monitor
$2695

PORTABLE II

Model IV $3195
Model II, 20MB $2950

DESKPRO

Compaq Deskpro
$1175

PORTABLE

1 Dr, 20MB Hard disk . $1995
with 40MB Hard disk. . $2395

COMPAQ 386

COMPAQ 386, 40MB
$4795

AT COMPATIBLE SYSTEM

512K, 1 Dr, 20 MB Hard disk, *6-8 Mhz Speed, Monochrome Card and Monitor
*Optional 10MHz
$1599

XT COMPATIBLE SYSTEM

2 Drives Monochrome System
$699

MAC PLUS

MAC Plus Computer $1599
20MB Seagate Hard disk for Mac Plus............... $599

The Mercury 386 System:

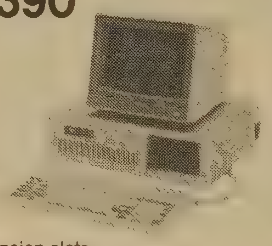
Running the same race as a PC/AT but finishing 3 times faster.

Mercury-386 System. $2950

- The Mercury-386 Mother Board is an AT compatible based on the Intel 80386 32 bit microprocessor
- The Mercury-386 board uses AT enclosure, power supply, keyboard and AT interface cards
- It runs PC software three to four times the speed of a PC/AT

- 512K interleaved 32 bit RAM on board
- Real time clock/calendar w/battery backup
- Intel 32 bit 80386 microprocessor
- 16 MHz clock speed
- Socket for 80387, 8 slot-two for high speed 32 bit RAM expansion
- Two PC compatible
- Four AT compatible
- 6/16 MHz clock speed switchable
- 1.2 MB floppy drive
- 40 MB ST-251 hard disk
- Monographics card
- 220w power supply
- High res monitor w/swivel base
- AT keyboard w/tactile feedback

AT 286 6/10/13MHz C.P.U. Board. $1390



- 640K on 6/10/13 MHz C.P.U.
- 1.2 MB floppy drive
- Floppy/hard disk controller
- 220 watt power supply
- Hercules compatible monographics card
- Parallel printer port
- 2 serial port one standard one option
- Real time clock and calendar w/battery backup
- 80287 math co-processor socket
- Hardware reset switch
- 8 expansion slots
- AT keyboard w/tactile back
- 72 hr. burn-in test
- 1 year parts and labor FREE warranty

Mercury AT 286 Plus 6-10-13 MHz Switchable $1490

- Zero wait state
- 6/10/13 MHz switchable (3 speed)
- 640K (100ns) RAM onboard
- 1.2 MB floppy drive
- 8 expansion slots
- Parallel port
- Monographic card
- Hardware reset switch
- 220w power supply
- Phoenix bios
- 80287 socket
- Keylock and LED
- AT keyboard w/tactile feedback
- High res. monitor w/swivel base

Mercury XT IV Turbo Plus 640K on board 4.77/10MHz. $750

- 640K on board, 4.77/10MHz hardware/software switchable
- 180 watt power supply
- 2 floppy disk drive (Fujitsu)
- 8 expansion slots
- parallel/serial/game port
- Real time clock/calendar w/battery backup
- AT keyboard w/tactile feedback (XT/AT switchable)
- Hi-res monitor w/swivel base
- 8087 socket

Mercury XT III Turbo Monochrome System 4.77/8MHz. $690

- 640K on board, 4.77/8MHz hardware/software switchable
- 180 watt power supply
- 2 floppy disk drives (Fujitsu)
- 8 expansion slots
- parallel/serial/game port
- Real time clock/calendar w/battery
- AT keyboard w/tactile feedback (XT/AT switchable) Hi-res monitor w/swivel base
- 8087 socket

1 Year Parts & Labor Warranty
90 Day Compatibility
Refund Guarantee

OTHER OPTIONS

Citizen 120D Printer	$199
Modem 300/1200	$129
360 Floppy Drive	$99
EGA Card	180
Monitor	CALL
Hard disk ST-225/ST4026	$290/490
ST-4038/ST 4051	$580/690
Logic Mouse C-7 Plus	$80

MERCURY COMPUTER SYSTEMS

1443 Broadway
Oakland, CA 94612 415/763-7622
(Near Convention Center) Easy access from 12th St. Bart*

2501 Channing Way
Berkeley, CA 94704 415/549-1717

Mercury delivers the lowest prices, the biggest selection and the best value in the Bay Area. All our systems are 100% IBM compatible and include disk drive, monitor and keyboard. Our monitor boasts the best color graphics and perfect high resolution text. And a Mercury Computer has enough parts and expansion slots to build just about any computer system you might want in the future.
IBM is a registered trademark of International Business Machines Corporation.

A Slice Of The Apple For Tecmar

Tecmar, Inc. (Solon, OH) formed a new division dedicated to developing enhancement products for Apple Macintosh computers. The division director will be M. Della Torre.

DOS 3.2 On Toshiba

Toshiba America, Inc. (Irvine, CA) announced that MS-DOS 3.20 is now shipping with the T1100 PLUS and T3100 portable personal computers.

Univation Puts Turbo Ventura Publisher On Lifeboat

Univation, Inc. (Milpitas, CA) announced that Lifeboat Associates (Tarrytown, NY) will distribute its *Turbo Ventura Publisher* desktop publishing package. The estimated value of the agreement is expected to exceed $1 million over the next 18 months.

US Robotics Sues Hayes and Bizcomp

US Robotics (Skokie, IL) has reported that a federal court refused to dismiss anti-trust and other charges filed last November against Hayes Microcomputer Products, Inc. (Norcross, GA) and Business Computer Corp. (Bizcomp-Sunnyvale, CA). In a March 11 order, the US District Court of Northern California ruled that US Robotics had alleged sufficient facts to sustain its action against both Hayes and Bizcomp, which means that US Robotics now has the opportunity for a trial. The suit seeks to have two US patents declared invalid or unenforceable. Both patents, one assigned to Bizcomp, the other to Hayes, claim as inventions certain aspects of the escape signal used to control PC modems.

Video Seven To Use GSS DGIS

Video Seven (Fremont, CA) has announced a joint agreement with Graphic Software Systems (Beaverton, OR) to incorporate its Direct Graphics Interface Standard (DGIS) into Video Seven's new high performance, high resolution display board.

Cordata-Philips Agreement Shaky

Cordata (Thousand Oaks, CA) claims that Philips Information Systems Ltd. is in violation of an OEM agreement signed between the companies in 1984. Philips, a Canadian-based subsidiary of the Dutch conglomerate N.V. Philips, has been paying royalties to Cordata under terms that granted Philips a license to manufacture Cordata-designed single-user PCs based on the Intel 8088 microprocessor. According to H.B. Im, CEO of Cordata, Philips notified Cordata that it ceased paying these monthly royalties in January 1987, yet it continues to manufacture computers based on Cordata technology.

Product Announcements

RECREATIONAL/ EDUCATIONAL

New From Accolade

Accolade (408/446-5757) has released *Accolade's Comics*, the first interactive comic book for the C64/128 and Apple II family of computers. Developed by Distinctive Software of Vancouver, CANADA, the Comics are contained on three disks, and feature two distinct themes with dozens of major and minor story lines that incorporate eight arcade-like games. ($39.95 and $44.95, respectively).

Accolade has also released *Power* under its mid-priced line of entertainment software, *Advantage*. *Power* is a 22nd-century war game where the player, pitted against the hostile Demoid Empire, must save Earth from a terrorist attack. The latest release is for C64/128 computers. ($14.95)

Guderian

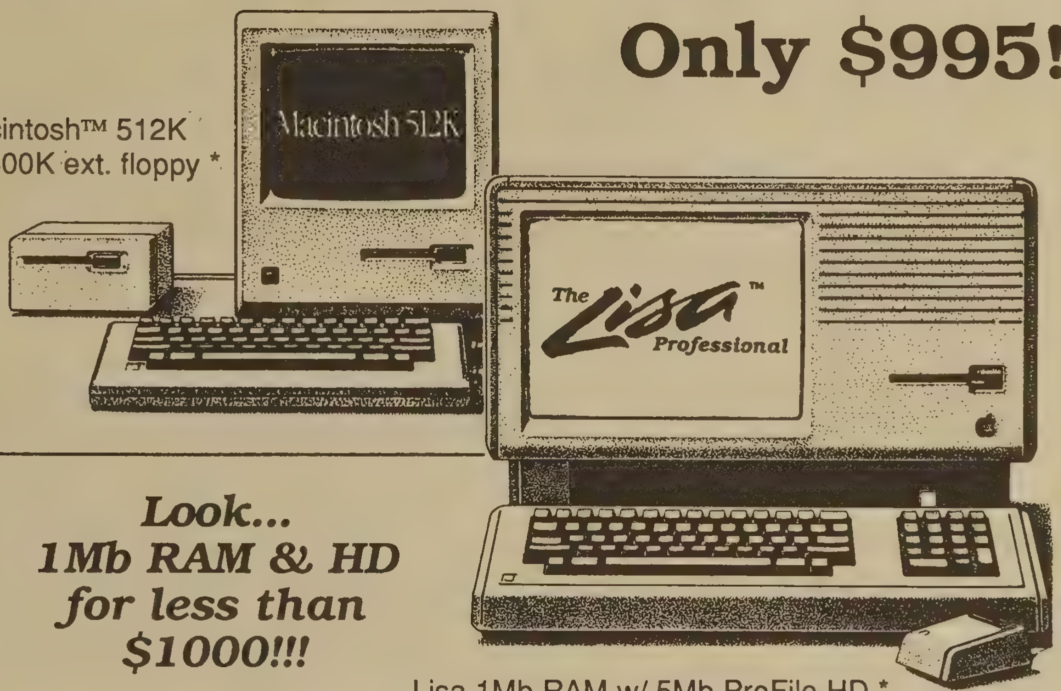
Avalon Hill Game Company (301/254-9200) introduced *Guderian*, a game that allows microcomputer generals to command German Panzers and Russian T-34 tanks in simulated WWII conflict on the Eastern Front. Named after the German commander general who designed the Blitzkrieg tactics that revolutionized armor tactics, *Guderian* simulations run using a joystick. Players can select multi-player or solitaire mode. For the Atari 8-bit, Commodore 64, and Apple II computer families. ($30)

The American Investor

Britannica Software (415/546-1866) has released *The American Investor*, a microcomputer simulation that uses actual historical market data so that investors become confident and comfortable with professional investment techniques. For IBM micros. ($149.95)

Sailing Through Story Problems

DLM Teaching Resources (214/248-6300) introduced a new math software program, *Sailing*



Mac or Lisa-Your Choice

Only $995!

Macintosh™ 512K w/ 400K ext. floppy *

Look... 1Mb RAM & HD for less than $1000!!!

Lisa 1Mb RAM w/ 5Mb ProFile HD *

Run Macintosh Software for less...

The Lisa Professional. A powerful computer that's as easy to run as any Macintosh™ yet a whole lot easier to afford! It comes standard with a larger 12" screen, detatched keyboard with numeric keypad and available in several affordable configurations.

More than 95% of available Macinitosh software runs on the Lisa. Call today for our free Lisa Fact Book and see how the Lisa can handle the application you have in mind for much less than you would spend on a newer Mac and hard drive.

Now With HFS™

Now the Lisa Professional from Sun is even more compatible with the Macintosh than ever before. Running under HFS (Hierarchical File System) you are no longer limited to the size of hard drive and gives you the efficiency of the HFS directory system. HFS is shipped installed at no extra charge with our 20Mb system. Call today and you could mouse around tomorrow for less!

RAM	DRIVE	PRICE
512K*	400K Internal	799.00
1Mb*	5 Mb ProFile	995.00
1Mb*	10Mb Internal	1495.00
1Mb	20Mb Internal	1995.00

*Reconditioned - 90 day Warranty. 30 day satisfaction guarantee - If you're not totally satisfied after 30 days we will refund the purchase price of the computer. Your cost is shipping only. Please call for details

We Specialize in Obsolete and Remarketed Apple Products.

Sun Remarketing
P.O. Box 4059, Logan, Utah 84321

ORDERLINE
1-800-821-3221
For a complete listing of products
CALL FOR OUR LATEST CATALOG
801-752-7631 *Questions - Service*

Apple, the Apple Logo, HFS and Macintosh are registered trademarks of Apple Computer, Inc.

VISA

NOW IN THE PENINSULA

Now you have a friend

Grand Opening in Mountain View!

EQUITY™ I
With Dual 360KB Floppy Disk Drives

- 256KB RAM memory (expandable to 640KB)
- IBM-compatible 8088 microprocessor
- MS-DOS® 2.11, GW™-BASIC and XTREE™ software
- Serial and parallel ports; three full-size expansion slots
- One-year limited warranty

$975

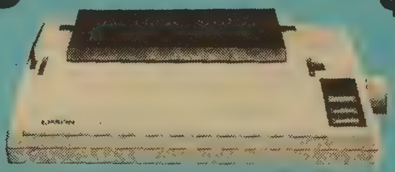
EQUITY™ II
Power Without the Price.

- Dual-speed NEC V30 microprocessor
- 640KB RAM
- Built-in video support for Hercules™ monochrome or color text and graphics
- Five full-size option slots plus built-in serial and parallel ports
- Single 360KB floppy disk drive and 20MB hard disk drive

$1499

EPSON EQUITY AT CLONE PRICES!

LX86 $185

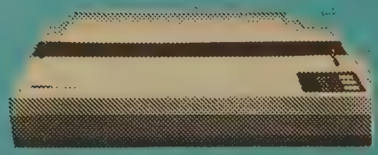


EX800 $395

Epson EX-800/EX-1000 Features

- Prints draft mode at a fast 300 CPS; 60 CPS in Near Letter Quality mode
- New Epson SelecType II feature lets you choose from eight different typestyles at the touch of a button
- Versatile paper handling with Automatic Sheet Load and Push Feed Tractor
- Built-in parallel and serial interface
- One-year limited warranty

EX1000 $515

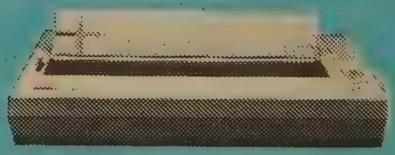


LQ800 $435

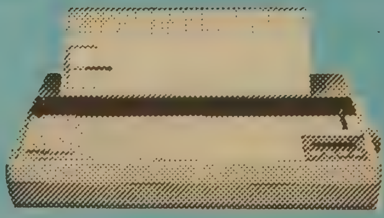
Epson LQ-800/LQ-1000 Features

- 24-pin printhead for high resolution output
- Prints 180 characters per second in draft mode; 60 characters per second Letter Quality mode
- One-touch fingertip selection of Letter Quality or draft print
- Built-in parallel and serial interface
- Built-in 7K buffer increases productivity
- One-year limited warranty

LQ1000 $595



LQ2500 $925



Epson LQ-2500 Features

- 24-pin printhead with high resolution output
- Prints 324 CPS in draft mode; 405 CPS ultra-high speed mode; 108 CPS Letter Quality mode
- One-touch font selection
- Advanced Epson SelecType III LCD control panel
- Built-in parallel and serial interface
- One-year limited warranty

Computown Mountain View
2455 M Old Middlefield Way
Mountain View, CA 94043
(415) 962-TOWN (415) 962-8696
M-F 9-6 • Sat 10-5

Computown San Francisco
760 Market Street, Suite 219
(Phelan Building)
San Francisco, CA 94102
(415) 956-TOWN (415) 956-8696
Mon-Fri 8 to 6 Sat 10 to 5

Epson is a Registered Trademark of Seiko Epson Corporation. Equity is a Trademark of Epson America, Inc.

EPSON®
PRINTERS

COMPUTOWN

in the Computer Business

We Sell, Deliver & Install

Come and see all the new models from Compaq, IBM, HP & Toshiba
ON DEMO

SPECIAL

1.

COMPAQ
DESKPRO 286
640K, 20MB Seagate
Compaq Monitor -
DOS 3.1

With 30MB
(Fast Speed)
Only $3295

Call **COMPAQ 286 12 MHz SYSTEM**
Now In Stock $3195
(Same as above system)

COMPAQ PORTABLE
III 20/40 MB
In Stock-Call

COMPAQ 386
—Best Price!

Macintosh	**$Call**
AST Premium 286 System	**Best Price**
ATARI ST 1040 Color System	**$935**
ATARI ST 1040 Mono System	**$735**

SOFTWARE

dBase III + (New Release) unprof.	**$389**
Lotus 1-2-3/Symphony	**298/425**
Word Perfect	**210**
Fast Back	**109**
Microsoft Word	**269**
Norton Utilities	**65**
Paradox	**439**
Ventura Publishing (Desktop)	**599**
Pagemaker by Aldus	**CALL**
Mace Utilities	**69**
Font Cartridges for HP	**CALL**

SPECIAL

2.

SAMSUNG 286 SYSTEM

20MB HD, 1MB RAM, 6/8 MHz
Full Mono System (made by
Samsung Telecommunications)

Base Unit $1320

Authorized Repair and Service Center

COMPUTERS

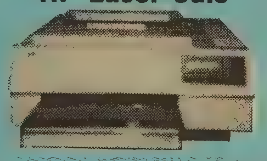
IBM All New Models	**Call**
IBM AT 6 MHz Base Unit	**$2349**
IBM XT 1 DR, 256K	**1099**
Compaq Deskpro	**1195**
Compaq Portable 2 DR, 256K	**1599**
Compaq 286 12 MHz	**Call**
Compaq Portable II Model 4	**3295**
Compaq Portable III—All Models	**In Stock**
Leading Edge Full Mono System w/20MB/30MB	**1729/1839**
AT&T Full Mono System	**1679**
ITT Ext Full Mono System	**1349**

DRIVES AND TAPE BACKUPS

20 MB Seagate Full Kit	**$369**
30 MB Seagate ST 238 Kit	**475**
30 MB Seagate 4038	**569**
42 MB Seagate ST 4051 10/20	**689**
Teac/Toshiba ½ Floppy	**97/92**
Iomega Bernoulli Box	**Lowest**

3.

HP Laser Sale



HP Laser Series II	**$1849**
HP Laser Plus	**$2790**
HP Laser Plus 500	**$3590**

Authorized
Novell Dealer.
Call us for Free
Estimate.

See Desktop Publishing in Action
By Ventura

PRINTERS & LASER PRINTERS

Canon Laser Jet	**$1834**
Quad Laser	**2939**
Epson LX 86E	**185**
Epson FX 86E/FX 286E	**359/498**
Epson EX 800/EX 1000	**395/515**
Epson LQ 800/LQ 1000	**435/595**
Epson LQ 2500	**925**
NEC P6/P7 (24 pin)/3550	**448/619/CALL**
Citizen 120D/MSP 10/15	**210/310/399**
Citizen Tribute (24 Pin)	**697**
Okidata 192 Plus/193 Plus	**345/535**
Okidata 292/293 w/Interface	**539/649**
Toshiba 321/341/351	**462/639/945**
Panasonic 1081i/1091i/1592	**215/267/465**
IBM ProPrinter/XL/Quietwriter	**389/595/1235**
Dynax 15 XL/DX 25	**Call**
C-Itoh 310/315/3550	**385/590/1175**

MODEMS

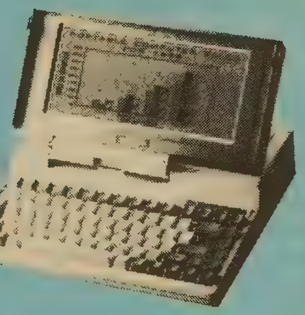
US Robotics	**Call**
Hayes 1200 w/o software	**$315**
Hayes 1200/1200B/2400BD	**385/339/582**
Everex Internal w/software	**119**
Okidata Modem	**Call**
AST Modem	**Call**

MONITORS

MAX 12/HX 12/SR 12	**$155/415/545**
Amdek 310A/600/710	**149/410/499**
Amdek New B&W Monitor	**Call**
NEC Multi-syn	**Best Price**
Sony Multiscan	**Call**
Quimax monitor	**Call**
Hitachi Hi-Res Monitor	**Call**

LAPTOP SPECIALS

4.



TOSHIBA
LAPTOPS

Toshiba 1100 Plus	**$1579**	Reg	$2399
Toshiba 3100 Plus	**$2979**	Reg	4499
NEC Multispeed Latop	**LOWEST**	Reg	1995
Zenith 181	**$1739**	Reg	2495

(Call for best deal on LAPTOPS)

MULTIFUNCTION BOARDS

AST SIX PACK PLUS/AST ADVANTAGE AT	**$179/365**
AST 6-PAK PREMIER/AST RAMPAGE	**387/267**
GENOA SPECTRUM/EGA CARD	**285/399**
VEGA 7 EGA/DELUXE	**339/379**
PARADISE AUTOSWITCH EGA	**379**
HERCULES NEW GRAPHIC CARD	**199**
INTEL ABOVE BOARD PC/AT	**265/375**
ORCHID PRODUCTS	**CALL**
IRMA PRODUCTS	**CALL**

MISCELLANEOUS
We carry all makes of surge protectors, math
co-processors, printer cables, chips, & diskettes!
Call for best pricing!

5. **CITIZEN**
PREMIER
35 PRINTER

Daisywheel at 35 CPS with tractor feed
Only $469

WE OFFER YOU
- **The best after sale service & repair**
- **Trained & knowledgeable staff**
- **Wide variety of products**
- **Service contracts • Best Prices**

Authorized Repair & Service Available

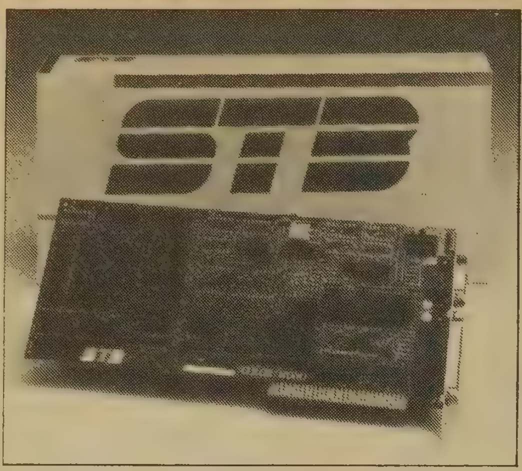
Computown San Francisco
760 Market Street, Suite 219
(Phelan Building)
San Francisco, CA 94102
(415) 956-TOWN (415) 956-8696
Mon-Fri 8 to 6 Sat 10 to 5

Computown — Mountain View
2455-M Old Middlefield Way
Mountain View, CA 94043
(415) 962-TOWN (415) 962-8696
M-F 9-6 • Sat 10-5

IBM is a trademark of International Business Machines.
Samsung is a trademark of Samsung Semiconductor & Telecommunications
Compaq is a trademark of Compaq

All prices subject to change. All prices reflect COD discount

COMPUTOWN



The Color/Mono video adapter offers increased display flexibility.

Color/Mono Video Adapter From STB Systems

STB Systems Inc., (214/234-8750) has introduced the Color/Mono video adapter. The dual purpose adapter supports CGA modes as well as MDA modes, which are switch selectable. In addition, the Color/Mono adapter provides a parallel printer port and an optional, battery-operated clock/calendar. ($149)

Through Story Problems, for the Apple II computer family. This software helps students solve math story problems, long recognized as pitfalls on national assessment tests. Designed around a lively pirate theme that appeals to both boys and girls, the two-disk program is organized into 12 content levels and includes map and chart reading and a section on working with money. As a bonus feature, the program has a built-in calculator. ($46)

New From Electronic Arts

Electronic Arts (415/571-7171) has released five Sierra On-Line software games under its affiliated labels agreement: *The King's Quest Trilogy, Space Quest*, and *Winnie The Pooh In The Hundred Acre Wood. King's Quest* and its sequels, *Romancing Thee Throne* and *To Heir Is Human*, make up the best selling trilogy in 3-D animated fantasy adventure games. Each program carries a suggested retail price of $49.95. *Space Quest*, a science fiction parody game, also carries a suggested retail price of $49.95, and *Winnie The Pooh In The Hundred Acre Wood* is a children's educational product with a retail value of $24.95.

Electronic Arts has also released the Apple II sequel to *The Bard's Tale, The Bard's Tale II—The Destiny Knight*. The Destiny Knight is 50 percent larger in code size and more challenging than its predecessor. *The Bard's Tale II* features an expanded dominion for exploration and adventure, and incorporates many advanced combat and magic systems. Also available now is a cluebook ($12.95) for assisting players through the various dungeons. The sequel game, for the Apple II family, is $44.95.

A third release from Electronic Arts is *Ogre*, a strategy game from Origin Systems, for the IBM PC and compatibles. *Ogre*, like *Autoduel* before it, is a computer-enhanced version of a classic strategy board game. It pits one or two players against one another—one as an incredible solo-fighting Cybertank, the other as a more conventional force of infantry, armor units and command posts. ($39.95). Also new are Commodore 64/128 versions of *World Tour Golf*, designed for up to four players with options such as handicaps, strength variations, club skills and hook and slice tendencies incorporated into play. ($34.95) Also for the Commodore 64/128 is a new version of *Ultima I*, from the *Ultima* adventure game series. The graphics and animation have been significantly improved in this medieval adventure, in which the player is an adventurer summoned to the realm of Sosaria. ($39.95)

Epyx Releases

Epyx, Inc. (415/366-0606) has released *Sub Battle Simulator* for the IBM PC and compatibles. The objective is to command a WWII submarine in either the Atlantic or Pacific, complete the assigned mission, survive, and return to home base. There are 24 American and 36 German missions to choose from, and all are based on historical data.

Epyx has also released *Destroyer*, an authentic and detailed combat simulation set aboard a fully-armed Fletcher Class US Naval Destroyer. The overall objective is to accomplish a selected mission without being sunk. For the C64/128 and Apple II family currently, and for IBM micros and compatibles late this year.

Epyx has also debuted *World Karate Championship*, which transports players to eight international locations for karate competitions against the computer or another player. Tougher and tougher opponents, from white to black belt, are fought against a backdrop of the Statue of Liberty, Mt. Fuji in Japan, or the famous Opera House in Sydney, Australia. For the Commodore 64/128, Atari 8-bit machines, and later this year, Apple II and IBM micros.

Starglider For IBM

Firebird (Ramsey, NJ) has released *Starglider* for the IBM PC and compatibles. *Starglider* places the gamer in command of an airborne ground attack vehicle that must ultimately do battle with the almost-invincible starship, the Starglider. ($44.95)

Online Air Warrior

GE Information Systems—GENIE (301/294-5647) has introduced *Air Warrior*, an interactive, aerial combat, multi-player game that can be played with the Apple Macintosh, but will soon be offered for other systems. Up to seven planes are involved in this real-time, on-line air combat game with varying degrees of difficulty.

Bureaucracy

Infocom, Inc. (617/492-6000) has released *Bureaucracy*, the latest adventure from Douglas Adams, author of *The Hitchhiker's Guide To The Galaxy*. This new game puts you in the midst of a bureaucratic muddle so convoluted that you can't help but laugh. Available for the IBM, Apple II. Macintosh, Atari ST, Commodore 128, and Amiga.

Apple II Science Courseware

Prentice Hall, Allyn and Bacon (201/592-2540) have introduced the *Prentice Hall Science Courseware* Series, a complete library of 30 software programs designed to correlate to the life science/biology, earth science, and physical science courses offered at junior and senior high school levels. These 30 programs contain concepts recommended by teachers on the basis of four criteria: the concepts are process-oriented, too big or small to be demonstrated in the lab, very difficult for students to understand, and conceptually suited for computer-aided instruction. Available for the Apple II computer family.

Apple II Math Tutor

Scholastic Software (212/505-3000) has launched *Math Tutor*, a comprehensive set of four math tutorials for the Apple II computer family, designed for grades one through six. It includes programs in addition, subtraction, multiplication and division. The programs give students an introduction to arithmetic operations and concepts and reinforce learning with practice problems. All four *Math Tutor* packages are available in both school ($99.95) and home ($59.95) versions.

New Games From Strategic Simulations

Strategic Simulations, Inc. (415/ 964-1353) has announced that four brand new products and numerous program conversions will be available this spring. *Realms of Darkness* is a first for SSI because a parser has been included to enable the player to talk to people and move objects. Currently available for the Apple II series with a Commodore 64/128 version planned for late May.

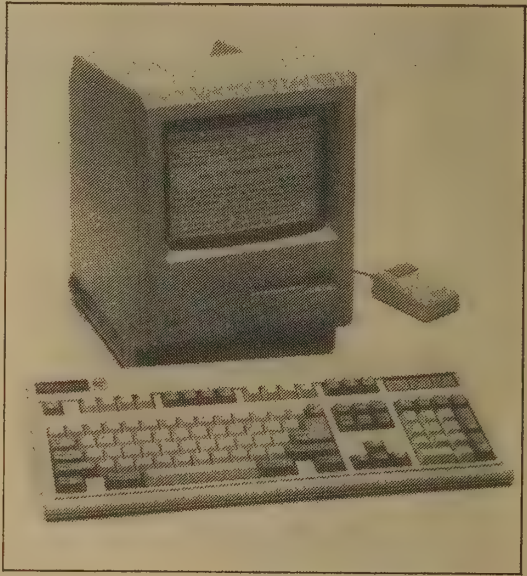
Phantasie III—The Wrath of Nikademus is the final confrontation with the Dark Lork Nikademus. New features enhance the game's play, and characters from *Phantasie* and *Phantasie II* can be used. Available for the Apple II series with C 64/128 due in late May.

Battlecruiser uses the same game system as in *Warship*. Gary Grigsby helps you to re-create surface naval engagements from WWI and WWII. For use now on Apple II, C 64/128, and Atari 8-bit computers.

War in the South Pacific is a massive land/sea/air campaign game (with two smaller scenarios included) from Gary Grigsby.

Rebel Charge: The Battle of Chickamauga is the most current of the the Civil War simulations from Chuck Kroegel and Dave Landrey. *Gettysburg: The Turning Point* game system is used but the designers changed the time scale to one hour per phase and included an option to use the regular scale map or a smaller scale map. Available for Apple II, C 64/128, and Atari 8-bit systems by late April.

Due to circumstances beyond SSI's control, *Roadwar 2000* and *Phantasie* conversions for the Mac have been cancelled.



Mac Keyboards From Datadesk

Datadesk International (800/826-5398) has unveiled two high-performance, full-function keyboards for the Apple Mac, the MAC-101/ADB and the Mac-101. Both keyboards use the industry standard 101-key layout, have a full compliment of function keys and are designed to meet the high-speed data input needs of word processing, spreadsheet and desktop publishing applications. The MAC-101/ADB is for the Mac II and SE computers and has a built-in Apple DeskTop Bus connector, which allows for the daisy chaining of up to 16 input devices. The MAC-101 is designed for use with the installed base of Mac computers. ($169.95)

Computerizing Your Business

. . . a buyers' guide for businesses and professionals

Analyze Your Needs

When Julian Systems is approached to develop a business computer system, our first question is, "What do you need your system to do?" You can prepare in advance for this all-important question by examining the way that your business works.

Ask yourself a few questions:

- What are the major tasks that keep your business running?
- Of these, which would benefit from automation?
- How many individuals are involved in these tasks?
- What information do they need to share?
- What does each need to do individually?
- Do you need telecommunications?
- What computer systems are your employees familiar with or attracted to?

The answers to questions like these will provide important clues in determining the right combination of hardware and software, to maximize the effectiveness of your investment.

Select Your Supplier Carefully

In most cases, the key to successful computerization lies not in the hardware, but in the supplier.

To get the most out of your computer system, you need expert consultation from the very beginning. Your supplier should be able — and willing — to spend the time necessary to customize the system for your business.

An effective and knowledgeable consultant can help you select the best software, steering you clear of products with functional limitations and "bugs" while assuring full compatibility. And he or she should either know your business, or be willing to take the time to learn.

Look for a supplier who can be the single source for all the components of your system. This will not only simplify the ordering and installation process. It will also make it easier for you to build a relationship with your supplier. And you'll have only one person to call when you need help.

Most importantly, look at your potential supplier's track record. Request two or more references, and call them. Make certain that the supplier has dealt fairly in the past, and has supported his products effectively. Every business computer system — no matter how simple — will require support. And every business client deserves it.

Consider Leasing

Cashflow management is one of the primary cornerstones of a successful business. And one of the best ways of making capital expenditures while keeping cashflow in line is leasing.

A well-structured lease-to-own plan will allow you to:

- Meet budget goals
- Conserve capital and credit
- Obtain a manageable, fixed monthly payment
- Avoid restrictive covenants
- Generate a return on freed capital

For example, consider Julian Business Credit, a leasing plan that Julian Systems has developed in response to the needs of our business clients. Under the Julian Business Credit plan, our clients receive:

- **24-hour approval**
- **Automatic approval for 125%** of the amount financed, to allow for system upgrades
- **Up to three (3) payments deferred** with no penalty (financing charges may apply, however)
- **One year of guaranteed carry-in service**

And Julian now offers business and professional clients **cash rebates** of up to $2,000 on lease purchases. That means no money down in most cases. In the case of larger systems, the rebate covers up to three payments.

It doesn't take much imagination to see how a leasing plan like this can allow you to make capital purchases while keeping your cashflow picture bright.

Service Contracts

Business computer systems see daily, full-time use. And if your system should fail, it could seriously hamper your ability to do business. So, no matter what computer system you select — or how reliable it may be — be certain that your supplier can offer you a service plan that fulfills your needs.

After all, most computer industry warranties end after the first 90 days. From there on, you're on your own. And computer repairs can be expensive. The cost of a service contract, by comparison, can be pennies.

At Julian Systems, we've developed a unique service plan for our business clients, called *Julian***Care**™. It's reasonably priced, and it offers coverage that no other computer supplier can equal.

*Julian***Care** is available in three levels of coverage. The most basic plan, **Carry In Service**, provides for repair and/or replacement of the covered equipment, including labor — but the customer must bring the machine to us. This plan is often sufficient for sole proprietorships.

The next level, **On Site Service**, provides for a technician to attempt repair at the client's premises. Since many apparent computer malfunctions are actually software problems — or simple things like dirty disk drive heads and faulty cables — they can be taken care of in a single visit, with minimal down time.

The highest level of *Julian***Care** couples On Site Service with our **Replacement Option**, providing for temporary replacement of equipment while it is being repaired. Since no business can easily afford to be crippled for days by a computer failure, most of our clients choose the full *Julian***Care** coverage plan.

When shopping for service contracts, compare carefully and be sure that you can get this level of support. Only then will you be assured of smooth, trouble-free computerization of your business operations.

About Julian Systems

Julian Systems is an Apple® VAR (Value Added Reseller) specializing in the Macintosh™ computer. Our staff is composed of programmers, engineers, graphic designers and telemarketing professionals. All are expert in computer applications within their respective fields.

Julian Systems offers a full range of services to business computing clients, including:

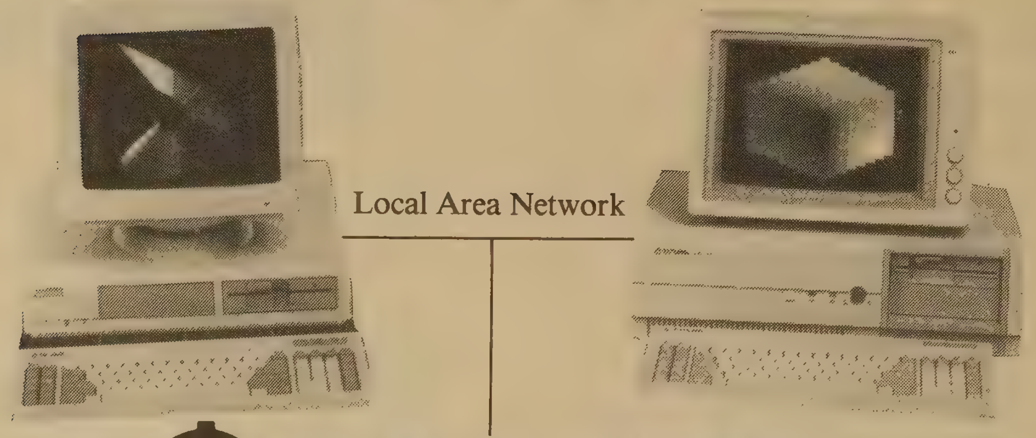
- System design, configuration and installation
- Custom programming
- Business financing plans
- Full repair and maintenance contracts
- Training and system support

For further Information:

Julian Systems Inc.
140 Mason Circle, Suite H
Mason Industrial Park
Concord, CA 94520
(415) 686-4400

Authorized Value Added Reseller

Make The Right Connection



TATUNG

TCS-7000
- 6/12 Mhz Switchable
- 100% IBM PC-AT Compatible
- Expands to 1 Mb Ram on Motherboard
- 8 Expansion Slots

TCS-4000
- 100% IBM PC-AT Compatible
- 6/10 MHz Switchable
- Expands to 1 Mb Ram on Motherboard
- Equivalent of 5 Expansion Slots

Color Monitor
Model Resolution
- CM-1360 640 x 200
- CM-1322N 640 x 200
- CM-1380F 640 x 350 IBM EGA Compatible
- CM-1376 640 x 480 IBM PGA Compatible

Mono Monitor
Model Resolution
- MM-1222 800 x 350
- MM-1422 800 x 350

Terminal
- TVT-7220 DEC VT 220 Compatible
- TVT-7261 ANSI-ASCII Terminal

Tatung Computer Systems give you 100% IBM PC-AT Compatible speed, memory, and performance at a great price. And, you need look no further to find savings on high quality monitors, too.

You see, Tatung is one of the world's largest manufacturer's of computer components with a reputation for superior quality known around the world. In fact, we produce over a million monitors every year.

That's quality you can trust. And we deliver complete after sales service to you.

CALL NOW
(408) 435-0140

VAR, Distributors, OEM and Dealer Inquiries Are Welcome

Tatung Science & Technology
780 Charcot Avenue
San Jose, CA 95131

IBM and DEC VT 220 are registered trademarks of International Business Machines and Digital Equipment Corporation.

LASER CARTRIDGE RECHARGING
1/2 Price Of A New Cartridge
Includes:
- Free Pick Up & Delivery
- Wand Cleaning
- Genuine Laser Toner
- On-Site Corporate Service Available

Diskettes Box of 10, Tyvex labels . . . . $3.50 box

CATS (408) 984-5344

San Jose's Professional Recharging Service

Football For The IBM PC

In *Football* from Sublogic Corp. (217/359-8482), one or two players can enjoy the program that puts you in control of every aspect of the football game. You call the plays, offense, and defense. Choose your own quarterback, receivers, and running backs. An 18-player bench allows substitutions. every receiver, running back, linebacker, and safety has different physical attributes, i.e., speed, power, and catching ability. For the IBM PC, PCjr, or compatible with 256K minimum memory, CGA card and composite-color or RGB monitor. *Football* is available for $39.95.

New Scenery For Flight Simulator And Jet

Scenery Disk #7 is now available for the Commodore 64 and 128 computers and the Apple II computer family. This disk covers the East Coast of the United States in detail, from Washington D.C. through Key West FL. This may be used with both *Flight Simulator II* and *Jet* to greatly expand the user's flying environment. Highly-detailed areas are now available with more generic scenery areas that include enough radio nav-aids and refueling facilities to last a long while. A Space Shuttle is on the launch pad at Cape Canaveral. Details in Washington D. C. include the Washington Monument, White House, Capitol Building, Pentagon, Lincoln Memorial and more. Over 130 airports will challenge the flyer with 12 military airports. 10 ILS approaches and 22 airports with refueling facilities and seven airports that support ATIS. Price is $19.95.

Ant Farm From Sunburst

Sunburst Communications (914/769-5030) has released *Ant Farm*. Students must find the "work stations" of nine ants inside an ant farm. This software encourages students to examine their assumptions using trial and error, as well as teaching them how to identify similar situations and showing them the importance of making projections based on information they have gathered. ($59) For the Apple II family.

APPLE II

The Music Studio And Paintworks Plus

Activision Inc. (415/960-0410) debuted two programs for the Apple IIGS. They include *The Music Studio*, which provides the tools necessary to create a wide variety of compositions, and *Paintworks Plus*, a comprehensive graphics program.

With *The Music Studio*, a built-in sound editor offers attack, decay, sustain and release (ADSR) for fine-tuning volume, note duration and speed. You can channel the computer via the MIDI interface to electronic keyboards and synthesizers.

Paintworks Plus allows users to produce multicolored graphics with access to 4096 separate colors that are offered by the IIGS; you can also custom design or edit using a broad array of shapes and patterns.

New Programs From Alsoft

Alsoft, Inc. (713/353-4090) offers three programs to help with your Apple computers. The first is *DiskEnsure* that makes backup copies of your files to 400 or 800K disks; the second is *DiskExpress*, a disk optimizer; third is *ProLink*, which allows you to use your *AppleWorks* and other Apple II files on your Mac, or vice versa. Pricing is $39.95 for each product.

THE LAST WORD IN WORD PROCESSING FOR BUSINESS.

"Microsoft Word 3.0 for the Macintosh may be the most impressive word processor I've seen in some time—on any machine."
—Michael Miller, Info World

"We've been using Word 1.05 for a year and a half. It's great, but Word 3.0 is so hot it's got flames coming off it."
—Marketing Director, Gates Distributing

The word is out: Critics are saying that Microsoft® Word 3.0 offers business more than any other word processing program—on any PC.

That's because this is far more than a word processing program. It's a thinking tool. An editing aid.

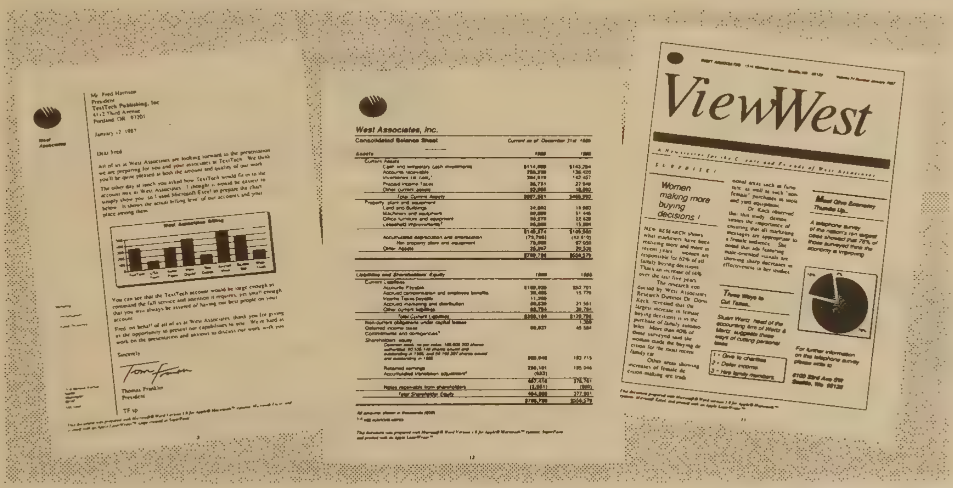
And the only word processing program to take full advantage of the unique graphic abilities of the Macintosh.

Ask one of the dealers listed below for a demonstration and you'll share the critics enthusiasm. Because Microsoft Word is true productivity: complete start-to-finish document preparation.

First, an outliner helps organize your thinking. Style sheets, a glossary and a phonetically-based spell checker ensure professional consistency. Then should you need to reorganize, you simply rearrange the outline—the text changes automatically! Screen updates appear almost instantly.

And best of all, Microsoft Word combines text and graphics—special symbols, charts and even logos—as no other program can. With a single key stroke, you can "quick switch" into programs like Microsoft Excel,™ MacPaint or MacDraw.™ And of course, Microsoft Word supports the publication-quality printers they require.

To get the good word—Microsoft Word 3.0—see your nearest dealer.



These documents were prepared with Microsoft® Word Version 3.0 for Apple® Macintosh™ systems, Superpaint, Microsoft Excel, and printed with an Apple LaserWriter.™

MICROSOFT®

Connective Micro Systems
1257-B Oakmead Parkway
Sunnyvale, CA. 94086
408 / 739-1170

Infomax
1320 Willow Pass Road #110
Concord, CA. 94520
415 / 356-6550

Infomax
1310 Mt. Diablo Blvd.
Walnut Creek, CA. 945 6
415 / 356-6565

Fry's Electronics
541 Lakeside Drive
Sunnyvale, CA. 94086
408 / 733-1770

Computer Center Hayward
23951 Mission Blvd.
Hayward, CA. 94544
415 / 538-7368

Home & Business Computer Center
1807-H Santa Rita Road
Pleasanton, CA. 94566
415 / 846-3944

Computer Selection
410 Townsend Street
San Francisco, CA. 94107
415 / 543-9888

Winner's Circle
Corporate Accounts
2618 Telegraph Avenue
Berkeley, CA. 94705
415 / 845-4810

Computer Ware
109 California Avenue
Palo Alto, CA. 94306
415 / 323-7557

Icon Review
6750 Mid Valley Center
Carmel, CA. 93923
800 / 824-8175

Softwaire Centre Palo Alto
477 University Avenue
Palo Alto, CA. 94301
415 / 327-0520

800 Software
940 Dwight Way, Ste. #14
Berkeley, CA. 94710
415 / 644-3611
800 / 225-9273

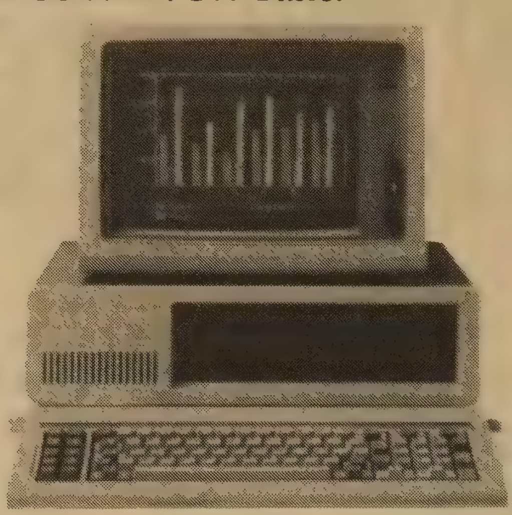
Software City
1500 Monument Blvd. #F15
Concord, CA. 94520
415 / 676-6662

Diamond Software
7916 Capwell Drive
Oakland, CA. 94621
415 / 633-2588

Computer Plus
1328 So. Mary Avenue
Sunnyvale, CA. 94087
408 / 735-1199

BROUGHT TO YOU BY
Gates
DISTRIBUTING

Microsoft, Microsoft Word and Microsoft Excel are trademarks of Microsoft Corporation. Macintosh, MacPaint and MacDraw are trademarks of Apple Computer.



Did You Just Buy An XT/AT Compatible?
Did You Receive A Manual or MS DOS 3.2 w/GW Basic?

IF NOT, READ THIS AD!!!

XT/AT Compatible Personal Computer User's Guide

Did you buy your compatible without a user's guide? Available Now! XT Compatible Personal Computer User's Guide. It's ideal, comprehensive, well-illustrated and provides step-by-step documentation.

Includes:
How to set up your system, options available and how to hook up peripherals, a complete overview of the system, Turbo 640K board instructions, Complete schematics of board and options, plus a new chapter on the EGA card, and much, much more!!!

SPECIAL LOW, LOW PRICE $12.95

MICROSOFT MS DOS 3.2 Latest Version With GW BASIC

OVERSTOCKED! We bought too MUCH and need to make room in our warehouse FAST. Order today and we will give you **FREE!! MS DOS PROGRAMMERS REFERENCE MANUAL** a $25 Value.

This Offer Is For A Limited Time Only!!

Only $69.00

Dealer Inquiries Welcome • Next Day Shipping By UPS

WHOLESALE DIRECT
800 Charcot Ave.
San Jose, Ca 95131
(408) 922-0111

Check item requested, Mail or call today (408) 922-0111

_____ User's Guide $12.95

_____ MS DOS 3.2 w/GW BASIC & Reference Guide $69.00

Purchase Total _____ Handling $2.00 ea. _____

Ca residents add 7% sales tax _____

Total Check enclosed _____

Due To Our LOW LOW Prices we Cannot offer Credit Card Purchases

Mail To _____

Address _____

City _____ State _____ Zip _____

Over 500 Titles of ST Software!
Come in and see Multi-Manager in action!

Kitchen Companion
Swiftcalc
Publishing Partner
DAC Easy Payroll
Midi Recording Studio
1st Word
Swiftax
Tax Advantage '86
Logistix
Michtron BBS
Flash
BT100 Emulator
Donald Duck Playground
Alpha Bytes
King's Quest II
Hitchhikers Guide to the Universe
Mean 18
Leader Board ST
Silent Service ST
Leather Goddnesses of Phobos
Starglider
Skyfox
Super Cycle
King's Quest III
Fligh Simulator II
Karate Kid II
Phantasie II
10th Frame Bowling
Arcticfox
Crystal Castles
High Roller
Chessmaster 2000
GFL Football
Bridge 4.0
Golden Path
Cad 3D
Degas Elite
Signs and Banners
Aegis Animator
Certificate Maker
Personal Pascal
Official Atari Developers Kit
Megamax C
GFA Basic
GFA Compiler
CZ-Android
midisoft Studio
DOS Shell
DB Man
V.I.P.
Thunder
DAC Easy Accounting
Word Writer
Data Manager

KING'S QUEST
for the ST
Retail list $58.00
Now only $29.98

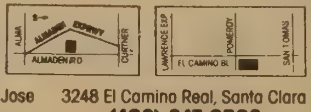
We now carry Multi-Manager!

ST COMPUTER
THE ATARI STORE
The best value in systems software and service
SAN JOSE COMPUTER

1844 Almaden Rd., Suite E, San Jose
(408) 723-2025

3248 El Camino Real, Santa Clara
(408) 247-0502

HOURS: 10-7 M-F • 10-5 SAT. • 12-5 SUN



Enhanced Version Of Instant Pascal

Apple Computer, Inc. (408/996-1010) has announced an enhanced version of Instant Pascal for the Apple II computer family. This is version 1.5 and has been enhanced to support non-Apple printers, as well as to improve performance by supporting faster media, such as UniDisk 3.5, RAM cards and hard disks. Upgrades for current owners are free. The program runs 1½ times faster when operated on an Apple IIGS. ($140) Lifeguard Harbor Software Inc. (617/263-1870) debuted a new software package called LifeGuard for the Apple IIGS that protects computer users from accidental loss of valuable data by providing the ability to recover disk files that have been deleted under ProDOS 16 and ProDOS 8. The program is written entirely in 65816 assembler and uses the Apple IIGS toolbox. It is compatible with all ProDOS disk drives. ($59.95)

ATARI

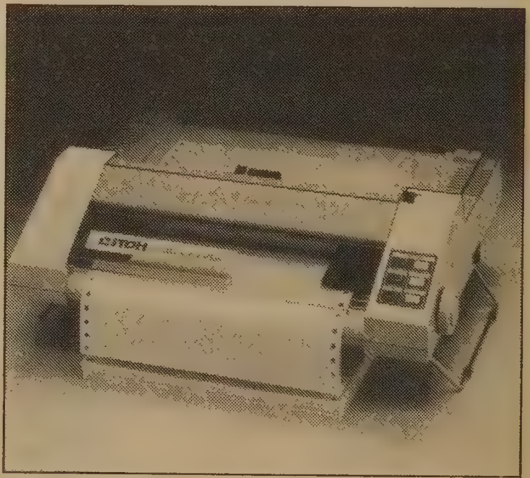
Magic Sac

Data Pacific, Inc., (303/733-8158) has announced the fourth enhancement to its Magic Sac product, and a printer driver for the Epson printer series. The Magic Sac enables the Atari ST to use Macintosh software. Revision 4.0 adds support for double-sided (800K) drives, limited color monitor support, GEM-based formatters and copiers and compatiblity with Apple's Finder 5.3/System 3.2 operating system.

COMMODORE

Cadpak Mouse Support

Abacus (616/241-5510) enhanced its *Cadpak* software to use the new 1351 mouse for both the C64 and C128 computers. Among the unique features of *Cadpak* is the ability to produce true, scaled output on a wide range of dot matrix printers. All purchasers of *Cadpak* since February 1st of this year are entitled to a free upgrade to the mouse version. Abacus also increased its customer sup-

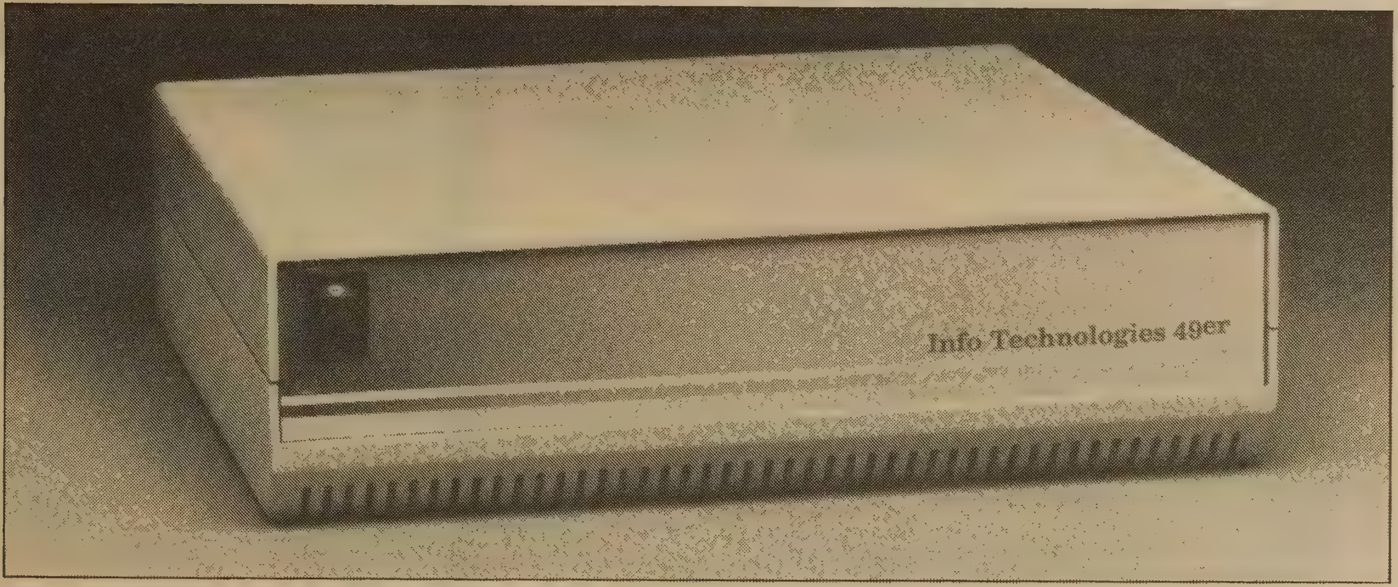


The ProWriter Jr. Plus offers enhanced speed and expanded memory.

Souped-Up ProWriter

C. ITOH Digital Products (800/423-0300) added more speed, memory and faster throughput to its popular ProWriter Jr. dot matrix printer. The enhanced printer is called the ProWriter Jr. Plus. Speed is increased by 33 percent to 160 cps in draft mode. In addition, throughput speed increased from 48 to 61 lines per minute (LPM) and the buffer memory been enlarged to 8K to handle multiple page documents. One button selection sets the printer for 30 cps in NLQ mode. ($369)

Attention All Mac Users:
Plug it in and go.



The Mac hard disk guaranteed to start working the minute you do!

No complicated set up! Info 49er is so easy to set up that 15 seconds after you plug it in you're ready to go!

Speed where it really counts!

The Info 49er with 49.2 MB (uses RLL controller card) when formatted & including System software has SIX Read & Write heads rather than the conventional 4 heads. That means you can run 30% faster.

Reliable under the worst conditions!

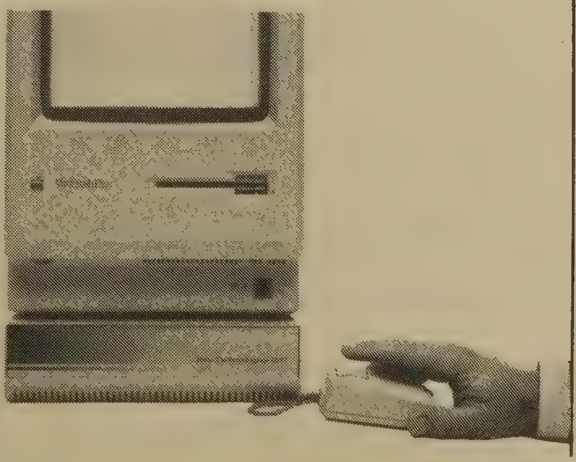
You may rest easier knowing that the Info 49er is *plated* rather than coated for increased reliability. Our plated media is similar to chrome and won't scratch like other "coated" media.

Conveniently designed for any Mac user!

The Info 49er is a valuable space saver, designed to fit under your Mac.

The low profile design assures you a stable drive that will not fall over like some other drives.

External address switches make using multiple peripheral devices practical and easy. And the power switch & LED indicator lights are on the front where you really want them. From now on, you will not have to worry whether your drive is working or not.



Info 49er Package Includes:

- 30 Day Money Back Guarantee
- 15 Month Warranty
- Complete Software Package
- All Necessary Cables

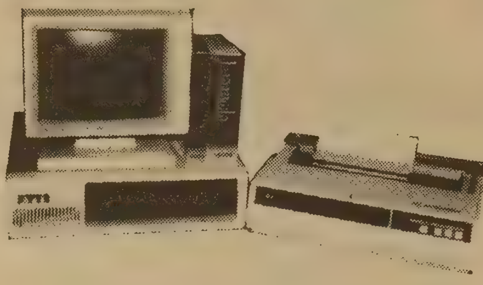
Also Available in 20 MB & 30 MB Configurations

Only $1695

Info Technologies
2890 Vassar Street, Suite A9
Reno, NV 89502
(800) 543-6225
In Bay Area
(415) 753-1222

DEALER INQUIRIES WELCOME

A PACKAGE OF SAVINGS
BUNDLED FOR BUSINESS OR HOME.



AQUARIUS BUNDLED TURBO

IBM PC XT compatible, 8088-2 CPU (4.77/8Mhz -Keyboard Switchable), 640k Memory, AT Style Keyboard, 150W Power Supply, 2 Floppy Disks, I/O Card with FDD/Ser/Par/Game and Clock Calendar, Monochrome/Graphic Card with 2nd Par Port, Monochrome Monitor and FCC ID bundled with Migent's Ability
(Integrated Word Processor, Spread Sheet, Database, Graphics, Communications and Slide Show), Enrich (Applications Generator) and a Fast, Letter Quality, Daisy Wheel Printer.

Total Package Only	**$1149**
Above Bundle w/20 Mbyte drive	**$1469**
Above Bundle w/20 Mbyte drive & color monitor	**1699**
AT Bundle w/color monitor	**1999**

AT Compatible Systems

10 MHz, 512k memory, keyboard, FD/HD controller, 1.2 Mbyte floppy, 192 watt P/S, monochrome monitor/card, made in the U.S., 20,000 systems installed, 52 hour burn-in & 30-day money-back guarantee on the System Unit **$1299**

Base AT w/20 Mbyte drive	**1599**
Base AT w/30 Mbyte drive	**1849**
Base AT w/40 Mbyte drive	**1949**
Above AT Systems w/EGA add	**450**

All systems come with a 1 yr. warranty on parts & labor. On-site, 24-hour response maintenance contracts are available.

ACCESSORIES

MONITORS	
Casper Hi-Res Amber	$ 99
Mitsubishi 16 Color	319
Mitsubishi EGA	425
Princeton Max 12	169

DISK DRIVES	
TEAC 55GFV 1.2 Mb	$129
Seagate 20 MEG Hard w/cntl	379
Seagate 20 MEG Hard Drive Only	299
Seagate 30 MEG Hard Drive Only	549
Fujitsu 360k DS/DD	89

MISCELLANEOUS

I/O Plus (ser/par/clock/game)	$59
Monochrome card	42
Ser/par printer cards	39/19
Migent pocket modem	199
Everex 300/1200 int. modem	119
Everex parallel and serial card	59
Everex EGA card	195
Migent In-House Accountant	79
Migent Ability	79
Migent Enrich	199
MS-DOS 3.2 w/GW BASIC	82

Ability, Enrich, In-House Accountant and Pocket Modem are trademarks of Migent, Inc.

IBM is a trademark of International Business Machines.

MasterCard **LEASING AVAILABLE FOR BUSINESSES** VISA

Terms: All orders are shipped COD via UPS. Prices subject to change and availability. Alameda County Add 7% Sales Tax. California residents add 6.5% sales tax. Items may be prepaid by certified check or money order. Above prices reflect 3% cash discount.

MICRO
STRATEGIES, INC.
1050 Marina Village Parkway, Suite 102 • Alameda, CA 94501
(415) 865-6880

ANNIVERSARY
FIRST YEAR ON TARAVAL
DISK SALE

Charter Members Only

Sony Single Sided or Maxell Single Sided Bulk	**99¢**	orig $1.50
Sony Double Sided or Maxell Double Sided Bulk	**$1.49**	orig $2.75

(Max 100 Disks Per Member)

Software For Le$$
Taraval & 20th Avenue
(just off 19th Ave.)
San Francisco, CA
(415) 753-1066

port channels by going online with Quantum Link, a large, telecommunications service provider for the Commodore user.

IBM AND COMPATIBLES

Framework II Developer's Toolkit

Ashton-Tate (213/329-8000) is shipping its *Framework II Developer's Toolkit*, a collection of routines and programs designed to aid developers in writing faster and more efficient custom applications using *Framework II*'s FRED development language. $99.95 until May 30th, then $149.95.

Instinct For Windows

Cadlogic Systems Corp., (800/962-0660) has introduced *Instinct*, a technical drawing package that operates under MS *Windows*. There is online help from any location within the application. The program is WYSIWYG, has unlimited zooming steps, offers all of the basic graphic items, such as dot, line, arc, etc. It also includes variable line style and width, brush pattern, and color availability. You can create drawings as large (as many pages) as you wish. ($99.95)

Upgraded Timepiece

Communications Dynamics, Inc., (503/ 684-5151) is releasing the version 1.3 of *Timepiece*, a project management software package for the IBM PC family and compatibles. *Timepiece* is now upgraded to include a custom graphics interface which includes line styles, patterns and a color palette. In addition, *Timepiece* is now compatible with Xerox's *Ventura Publisher*. Upgrades are now available for current customers for $50.

GEM Graphics Applications Available For Personal System/2

Digital Research (408/649-3896) has made available the complete line of GEM presentation graphics applications for IBM's newest PC family of computers, the Personal System/2. *GEM Draw Plus, GEM Graph, GEM WordChart, GEM Presentation Team* (available this summer), *GEM Business Library, GEM Desktop*, and the *GEM Programmer's Toolkit* software, are offered on the 3-1/2-inch diskette media for the IBM Personal System/2 models 30, 50, 60, and 80. These applications have been thoroughly tested on the new IBM hardware as well as on the IBM PC, XT and AT.

Pro3D/PC

Enabling Technologies (312/427-0386) has introduced Pro3D/PC, a three-dimensional solid modeling program designed to run under the MS *Windows* operating environment. The program's algorithms generate high quality 3D solid models in full colors as fast as most wire-frame modeling programs. Two modeling tools, the Profiler and the Lathe, allow users to create complex objects or scenes with speed and precision. ($595)

New From Intersecting Concepts

Intersecting Concepts (805/373-3900) announced new versions of *Backup Master, Code Blue* and *Media Master* programs. *Backup Master 2.0* is an improved hard disk utility backup for PCs and compatibles. It now includes an easy menu driven install program, advanced error detection and correction capabilities, and an unequaled backup progress display. *Code Blue 2.0* is an easy to use software conversion program that instantly transforms a DEC Rainbow 100's MS-DOS operating system into IBM's PC DOS. ($99.95). *Media Master 4.1* now supports disk-to-disk transfers with over

The American Success Story:

Once upon a time, America led the world in innovation, quality, engineering, and manufacturing with names like Edison, Ford, and Bell...

Once Again America returns:

$755
Basic system

PRICE...QUALITY...PERFORMANCE

The CLUB 286 is manufactured and serviced only in the U.S.A.
As proof of their commitment to quality and performance, CLUB AT Inc. is offering same day shipping, integration of the most up-to-date Intel parts, and 48 hour burn-in.

"If Imitation is the sincerest form of flattery, the CLUB AT pays the IBM AT a heartfelt compliment. The only failing of the (CLUB AT) is that it imitates the IBM machine to accurately; ...and you can't beat that..."

Karl Koessel **PC World** December 1986

"The CLUB AT's Low Price and Blazing Speed..."

Joe Desposito **PC Magazine** October 28, 1986

Basic system 8 MHZ CPU with option A $1075

Basic system 10 MHZ CPU with option A $1125

Option A: 1.2MB Floppy Drive
WD HD/Floppy Controller

Features:

- MAXI switch keyboard/Pro™ keyboard
- 6/8/10 MHz, selectable with 8 MHz CPU
- 10 MHz option available
- 1MB of inboard memory (with 512K standard)
- 8 I/O expansion slots
- 195 watt power supply, 110V/220V switchable
- Fully compatible high speed AMI BIOS, (written in U.S.A.)
- Full documentation, operation manual with binder
- Full one year warranty

Dealers and Corporate inquiries are welcome

CLUB AT INC. (415) 490-2201
46707 Fremont Boulevard, Fremont CA 94539

IBM AT, A*STAR and SAM3001 are registered trademarks of their respective companies

CLUB-286

AMERICAN MADE QUALITY
IMMEDIATE DELIVERY

$755 Basic system

PROUDLY MADE IN THE U.S.A.
NOT A FOREIGN COPY

SERVICED IN U.S.A.
Extended Warranty Available

AUTO CAD
RUNS Xenix™
NOVELL NETWORK
MULTI TASKING

Option A: 1.2MB Floppy Drive
WD HD/Floppy Controller

- MAXI switch keyboard/Pro™ keyboard
- Free Set-Up utility
- 48 Hours Burn-in
- 195W Power Supply
- 33% faster than IBM AT
- 512K RAM, expands to 1 MB
- 6/8/10 MHZ, 8 MHZ CPU Chip
- Full 200 page documentation and Reference Manual
- Clock/Calendar with Battery Backup
- W.D. Hard Disk controller
- Fully Compatible High Speed AMI BIOS, written in U.S.A.

Basic system 8 MHZ CPU with option A $1075 (NORTON SI 7.7)
Basic system 10 MHZ CPU with option A $1125 (NORTON SI 10.3)

FREE
Fully configured and tested
for your system requirements

☐ With 20MB Seagate 65MS 1/2 Ht.	$355
☐ With 20MB Seagate 39MS Full Ht.	$549
☐ DOS 3.1	$85
☐ 80287-8 8MHZ	$225

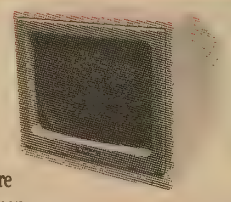
- ***One Year Limited Warranty***
- ***Dealers and Corporate qty. Discounts available***

CLUB 286 Mono system
- Basic system as described above plus Monochrome Display card and IBM quality Monochrome monitor **$1309**

CLUB 286 Color system
- High quality
- Basic System as above
- Plus color Display card and color monitor
- Fully Assembly and tested, no installation required **$1500**

CLUB 286 Color EGA system **$1740**

MONO MONITOR

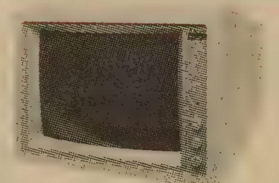


- Nonglare
- 12" screen
- 800 x 350 resolution
- FCC class 'B' approval

$138

IBM Quality Color Monitor $345

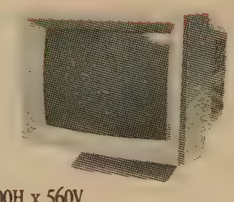
EGA MONITOR



- 640 x 350
- 640 x 200
- EGA and CGA
- FCC class 'B' approval

$480

NEC MULTISYNC

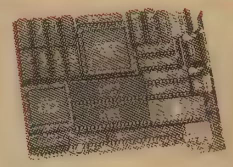


- 800H x 560V
- Test Mode Switch
- No Installation required
- EGA, PGA, CGA compatible

CALL

MICRO EGA

Club Micro EGA

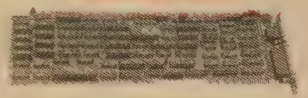


- External Switch
- 640 x 350 EGA
- 320 x 200 CGA
- 640 x 350 monochrome
- FCC class 'B' approval

$238

UNIVERSAL DISPLAY

EVEREX EDGE

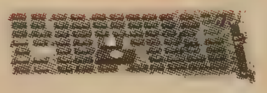


$248

- Parallel Port
- 132 columns text, color or mono
- Mono Display Hercules Compatible
- FCC class 'B' approval
- One Year Limited Warranty

HERCULES COMPATIBLE

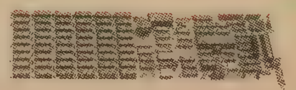
132 Columns



- Printer Port
- Software Switchable
- Monochrome Graphics
- Runs Lotus 123 Graphics
- Run 132 x 44 column display
- Comply with FCC class 'B'

$99

6-PAC COMPATIBLE

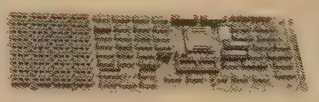


Club 384 (for PC)

- Serial Port
- Parallel Port
- 0-384K Memory
- Clock/Calendar
- FCC class 'B' approved
- Game Port and software

$88

ACCELERATOR

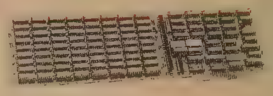


- Accelerate Your PC/XT to AT Speed
- 80286 CPU
- w/128K RAM
- Runs 80287 math-processor in 5MHZ or 8MHZ speed
- Runs 7 times faster than PC or 33% faster than the IBM AT

$399

CLUB EMS

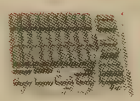
INTEL ABOVE-BOARD COMPATIBLE



- Works in PC/XT/AT
- 0-2MB Capacity
- Fits in LIM/SIM-EMS
- Expanded Memory Specs
- Made in U.S.A.
- Lotus Intel compatible

$109

MEMORY CARD



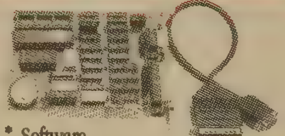
Club 576 (for PC/XT, and Portable)

- Software
- Short Card
- 0-576K Memory
- Supports 64K/256K DRAM

Made in U.S.A.

$55

I/O FOR PC/XT/AT

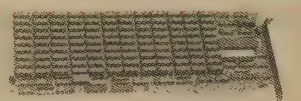


- Software
- Parallel Port
- Half size card
- Real time clock/calendar
- Bracket for XT version only
- 2 Serial ports (2nd optional)

Made in U.S.A.

$75

MEMORY CARD FOR AT



Club 3000

- No Piggy back
- 0-3MB capacity
- 64K/156K RAM chips
- Supports split memory addressing
- One Year Limited Warranty
- FCC Class 'B' approval

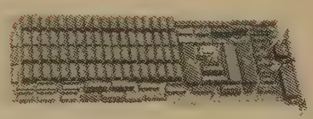
Made in U.S.A.

$155

CLUB 2500 **$138**

MULTIFUNCTION CARD FOR AT

Manager's Choice

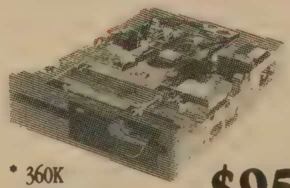


- Game port
- 0-2MB memory
- Runs at 12 MHZ
- 128K Increment range
- 1 Serial port (2nd optional)
- Self Installing software

$179

Club 2000
12MHZ AT-Multifunction
Made in U.S.A.

FLOPPY DISK DRIVE



- 360K
- Half height
- TEAC/FUJITSU
- Double density
- IBM grey color extra

$95

XT POWER SUPPLY

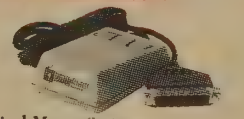
- 135W
- Reliable
- Complies with FCC
- Direct replacement
- One Year Limited Warranty

$83

AT power supply **$120**

OPTICAL MOUSE

Microsoft Compatible
Run Microsoft windows

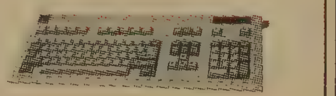


Optical Mouse Systems
Mouse with DR. HALO
- 200 Dots/inch
- Work with Auto-Cad
- 3 Buttons/built in Microprocessor

$119

Mechanical Mouse **$75**

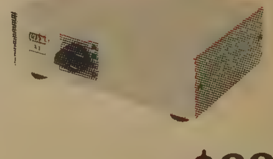
PRO KEYBOARD



Model no. 5151 **$88**

- Separate Numeric & Curser keypad
- AT Style Keyboard w/LED

SWITCH MASTER



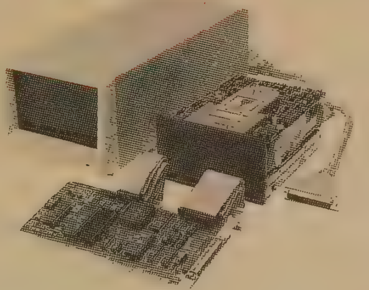
$88

- Cable included
- Share one printer by 4 computers or 1 computer to 4 printers

FAST HARD DISK FOR PC/XT AND COMPATIBLE

Upgrade Your PC/XT
Power Your XT

39 ms Access time



- Auto Head Park
- Boot from Hard disk
- Quality Seagate drive
- 39 ms average access time
- Software and Manual included
- Special Western Digital controller

	INTERNAL	EXTERNAL
☐ 20MB Hard Disk Subsystem Seagate 4026	$659	$759
☐ 30MB Hard Disk Subsystem Seagate 4038	$759	$859
☐ 40MB Hard Disk Subsystem Seagate (available now)	$859	$959

FAST HARD DISK DRIVE FOR AT

QUALITY & PRICE

39 ms Access time

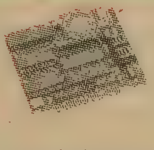
- 39 ms access time
- Auto Head Parking
- Linear Voice Coil Activator
- One Year Limited Warranty
- Cables, AT sliding rail and Software included

20MB 4026	$528
30MB 4038	$599
40MB 251	$628
72MB (23 ms)	$1095
80MB 4096 (28 ms)	$1195

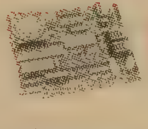
EVEREX MODEM—HAYES COMPATIBLE

- Half size/Half power
- Excellent for Long Distance calls
- Free Bitcom Communication software
- One Year Limited Warranty
- Fully compatible with Hayes 1200 Baud Smartmodem
- FCC class 'B' approval

NEW



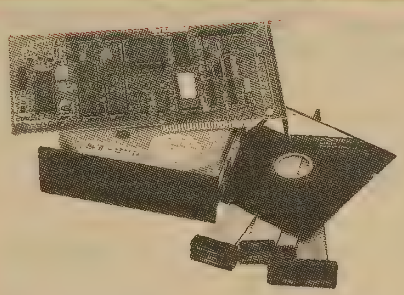
1200/2400 Baud
EVERCOM 24 $229



Made in U.S.A.

300/1200 Baud
$128

20/30 MB HARD DISK SUBSYSTEM



For PC Upgrade to XT

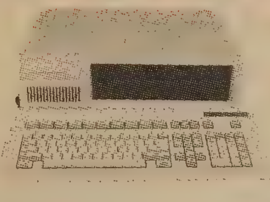
- 65 ms access time
- Boots from Hard Disk
- Western Digital Controller
- Manual, Cables, Hardware and Software included
- 20/30MB Seagate Hard Disk

	INTERNAL	EXTERNAL
20MB	$365	$567
30MB	$425	

With Floppy Controller Add $50
(This applies to 20MB subsystem only)

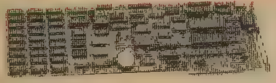
CLUB XT TURBO 4.77/8.0 MHZ

- 360K Floppy Drive
- 135W Power supply
- Electrical: 115V/220V
- 8088-2 CPU, 4.77/8.0 MHZ
- Legal Compatible BIOS
- Floppy Disk Controller
- 8087 Math Co-processor (option)
- Dimension: 17.5 x 19 x 6.1
- 640K Memory
- 90 day Warranty
- Quanity discounts available



$505

MULTIFUNCTION EMS



NEW

- For PC/XT and AT
- 1 Serial Port (2nd optional)
- Parallel port, Game port
- Real time clock
- Support Base and EMS Memory
- Capable to increase memory to 2 MB

CALL

WEEKLY SPECIALS

	Qty. of 2
Toshiba 72MB	**$995**
Seagate 251	**$575**
Teac Floppy 360K	**$89**

CHIPS

64K DRAM

150 ns (9 pcs.)	$9
120 ns (9 pcs.)	$12

256K DRAM

150 ns (9 pcs.)	$27
120 ns (9 pcs.)	$36
100 ns (9 pcs.)	$45

HD/FLOPPY CONTROLLER

FOR AT

$170

FOR PC/XT

$140

OTHERS

HARD DISK CONTROLLERS	
* Data Switch Box	*$88*
* PC/XT controller	*$90*
* Floppy controller	*$49*
* 25 Pin Serial Cable	*$18*
* Split Power Y-cable	*$8*
* IBM Type Printer Cable	*$15*
* IBM AT Bus Extended Card (good for test & debug)	*$30*
* AT HD/Floppy Controller	*$170*
* Compaq 286 Hard Disk Controller	*$188*
* PC/XT HD/Floppy Controller	*$140*

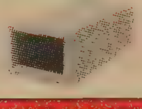
CHIPS	
* EPROM 2764	*$6*
* EPROM 27128	*$8*
SOFTWARE	
Graphics DR. HALO	*$49*
Communications BIT-COM	*$49*
ADD ON	
* Kits for Mini I/O, 2nd Serial Port	*$25*
* Kits for CLUB 2000, 2nd Serial Port	*$25*

DEALERS SPECIAL

* Mini I/O	*$45*
* AT keyboard	*$50*
* Math Co-processor	*CALL*
* Two Drive Chassis	*$85*
* Memory Short card	*$40*
* AT Power supply 192 watt	*$95*
* 6/8 MHZ AT-compatible computer	*CALL*
* AT HD/Floppy Controller (XT size)	*$160*
* XT HD/Floppy Controller (XT size)	*CALL*

CHASSIS

$99



- W/Power supply
- Good for 2 drives

STREAMING-TAPE BACKUP

- Teac
- Wangtek

	20MB	60MB
INT.	$580	$757
EXT.	$680	$857

FREE MEMBERSHIP

CLUB AT INC.

46707 Fremont Boulevard, Fremont CA 94539
Quality and volumes is Our Business
All Sales CAll **(415) 490-2201**
24 hour FAX No. **415-490-2687**

VISA   MasterCard   AMERICAN EXPRESS

Now Open 7:30 to 6:30 PST for your convenience
International Sales Desk Now Open

University P.O.'s are welcome   Quantity Discounts are available
Corporate Buyer call for Neil Mehta/Joe McAvoy   Dealers are Welcome

ORDER BY MAIL: Check or Money Order, California add 6.5% Sales Tax

ORDER BY PHONE: C.O.D., Cashier Check, VISA (3%), MasterCard (3%) American Express (4%) or Approved Company P.O..

TERMS: All prices are subject to changes and quantity may be limited and we reserve the Right to Substitute Equivalent Items. Unauthorized Returns are subject to 10% Restocking Fee. Call for RMA Numbers for Returns and Repairs. Returning items must be sent shipping prepaid by customer.

IBM, Hercules, BitCom, Xenix are trademarks of their respective companies. Limited Warranty, 1 Year parts and 6 months Labor.

KGB: THE CABLE CONNECTION

Tie Your Peripherals Together with KGB's Quality Connections. . . KGB Cables, RS232 Accessories & Easy Access switches.

CABLES:

We offer shielded or unshielded cables with industry standard terminations. Cables include screw retention hardware and standard screw-type strain relief. Each connection is internally insulated. Each cable 100% factory certified.

Hundreds of serial and parallel cables in stock.

Match with any computer/peripheral combination.

KGB TOP SELLERS

- 6′ molded IBM PC Printer cable with 90° connector. (Eliminates cable/printer paper interference.) $14.95
- 6′ Standard IBM PC parallel printer cable. $9.95
- IBM PC/XT/AT monitor/ extension set includes 6′ monitor power and signal cable with keyboard extension. $24.95
- IBM AT serial port adapter cable allows use of standard RS232 cable with your AT. $7.95
- 6′ IBM PC/AT Hayes Modem cable. $9.95

Ask about our custom cable capabilities for special configuration needs. Volume and special discounts available. Lifetime guarantee on all cables.

DATA SWITCHES

KGB's variety of data switching units offer every combination of productivity potential: one host, dual peripherals; dual hosts, dual peripherals; and bidirectional models in both parallel and serial configurations.

They include:
- 2-way (AB). $29.95
- 4-way (ABCD). $34.95
- X-type (AaBb). $39.95

Newly arrived KGB exclusives

- Parallel switch for the IBM PC/XT/AT and compatibles $29
- DB-9 data switch for use with MacIntosh, IBM Video, IBM AT Serial, and Atari computers. $29
- S/P-100 Serial/parallel interface for most computers. $59

Standard 6′ cables for the above come in male/male, male/female, or whatever style and configuration suits your equipment.

RS 232 ACCESSORIES

At KGB, you'll find a complete line of accessories to enhance RS232 communications operations.

MOST POPULAR WITH THE PROS. . .

MINITESTER, MODEL #KRS-MT *offers the opportunity to avoid expensive service calls by pinpointing RS232 problems you can fix yourself. Just plug the minitester inline and in seconds you get the status of your data lines. Comes complete with male/female connectors.* $10

GENDER BENDER MODEL #KRS-GB. . .*always a bonus to have a batch of these on hand at peripheral hook-up time. Eliminates male/female connector mismatches. All KGB units guarantee long life and lasting service.* $6

CALL OUR HOTLINE NOW 408 437-0800

or
Visit our showroom. See our full line of products.
OEM/Dealer Inquiries Welcome.
761 Mabury Rd. Suite 14
San Jose, CA 95133

KGB
Enterprises

200 foreign disk formats on both 5 1/4- and 3.5-inch floppies and also runs on higher speed computers. ($39.95)

New Features For MagnaType

Magna Computer Systems (818/986-9233) has announced that *MagnaType*, the PC-based typesetting system, has been enhanced with new features. Now included with the package is a library of "style sheets" for various kinds of applications, including books, magazines, newsletters and business cards. By adding simple generic plain-English tags, text files can be quickly and automatically formatted to produce a finished document. The new features are part of a major new release of *MagnaType, Version 1.6*

Business Works PC

Manzanita Software Systems (916/ 781-3880) released a new business accounting system specifically for the IBM PC, XT, AT and compatibles. The first two modules of *Business Works PC*, the System Manager and General Ledger, are now available. The modules are the first in a complete line of MS-DOS accounting modules with the Accounts Payable scheduled for release in April. Useful features such as on-line HELP at almost every prompt guide the user through the program. Show windows list needed information such as account numbers, invoice numbers, and the creation of export files that are accessible by other programs like *Lotus 1-2-3, Multiplan, WordStar* and *WordPerfect*. *System Manager* is $95 and *General Ledger System* is $395.

New Microsoft Products

Microsoft Corp., (206/882-8080) has announced new systems software to compliment IBM's new hardware based on the 80286/386 processors.

MS OS/2, a multi-tasking operating system that provides PC developers and users with minicomputer type power with *Windows* presentation manager as the standard graphical interface. MS OS/2 will also run MS DOS applications.

Microsoft *LAN Manager* is a sophisticated new networking system that allows for true distributed software on PC systems and can also be linked to Microsoft's existing MS DOS and XENIX networks.

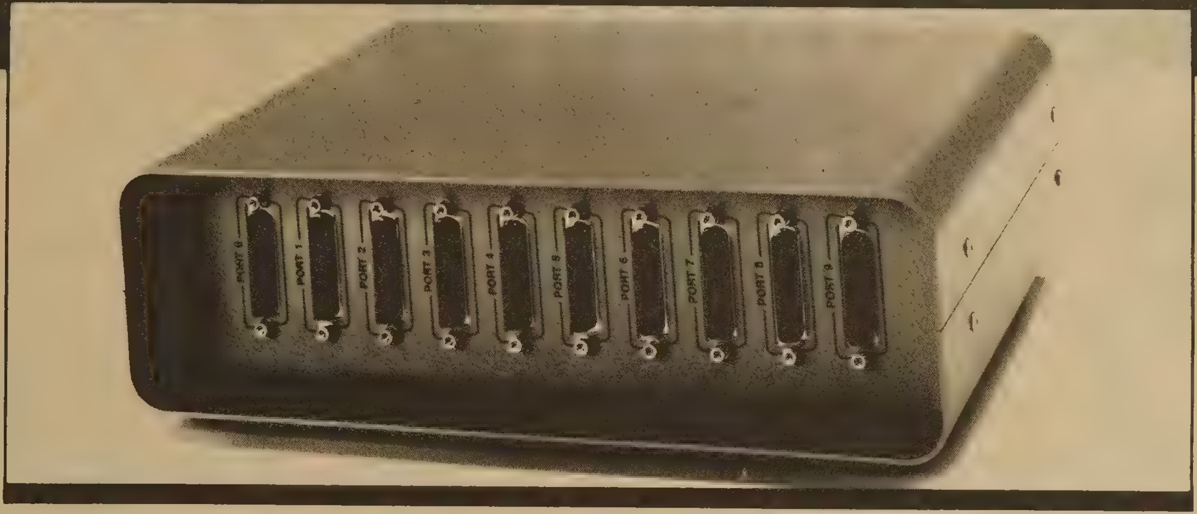
MS OS/2 Software Development Kit includes the MS OS/2 kernel, language compilers, specifications for Microsoft LAN Manager and presentation manager, and all other components required for software developers to being writing MS OS/2 applications.

MS DOS 3.3 offers better performance and utilization of hard disks, and improved support for foreign language versions. The new release of *Microsoft Windows, v2.0* has the same visual appearance as the new MS OS/2 Windows presentation manager. It has as much as fourfold improvements in graphic output over earlier versions of *MS Windows*. A number of keyboard and mouse operations have been streamlined.

Microsoft has announced new 3.5-inch diskettes and a version of the MS Mouse that provides hardware compatibility with the new IBM Personal Systems/2. Various Microsoft applications products will be enhanced over time to take advantage of the high resolution graphics on the new system.

Microsoft also announced the following delivery dates: April '87—applications on 3.5-inch diskettes to end users; August '87—*MS OS/2 Software Development Kit* to software developers; November '87—MS OS/2 *Windows* presentation manager and MS OS/2 *LAN Manager* to developers; December '87—MS OS/2 Kernel shipped to OEMs; First Quarter '88—anticipated shipment of MS OS/2 kernel to end users.

PC PORT CONTROLLER



©1986 CSI ALL RIGHTS RESERVED

Applications

- Inexpensive **local area network.**
- Printer buffering and sharing by multiple hosts.
- Host buffering and sharing for multiple printers.
- Local RS232C/RS422 data concentrator with programmable controller functions.
- Timed dial-up and message transfer with stand-alone modem.
- Point-of-Sale (POS) network systems.
- Electronic mail systems.

System Features

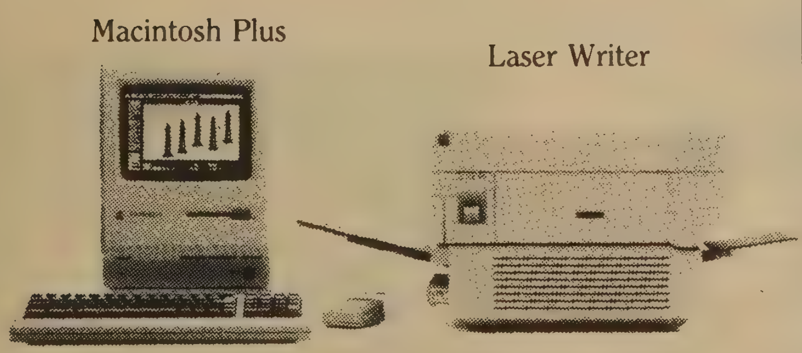
- Ten asynchronous RS232C/RS422 ports.
- 192K bytes of buffer memory.
- Resident **FORTH** or basic control language (Up to 7 screens of **FORTH** may be stored in changeable non-volatile memory) (BASIC-FALL '86).
- Host programmable port set-ups stored in non-volatile memory.
- Port reprogrammable transfer destination by embedded character protocol.
- Remote (modem) factory custom programmable.
- **Real-time** calendar clock for time and date stamping of messages.
- Any port to any port data concentrators.

COMPONENT SYSTEMS INC.

778-A Brannan Street
San Francisco, CA 94103
Telephone (415) 861-1345

CSI

Affordable Desktop Publishing
Lowest Prices Ever!



Most powerful personal computer in the world

$1599

Professional appearance for all your publishing needs

$3599

Compuworld

Sacramento
916-924-9608

Davis
916-753-3800

Vallejo
707-648-1222

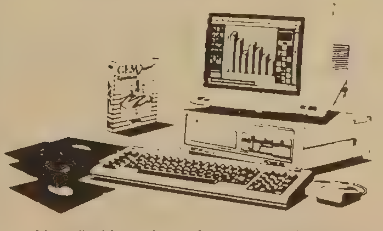
Apple & the Apple logo are registered trademarks of Apple Computer Inc. Macintosh is a trademark of Apple Computer Laboratory, Inc. and is being used with express permission of its owner.

Authorized Apple Dealer

EXCELLENT VALUES

#1 in England

AMSTRAD



• "Mouse" with window software • Digital Research, Inc.'s GEMdesktop, GEMpaint, DOSPLUS, Basic 2 • MSDOS V3.2 • 512K Memory, IBM® -compatible • Paper white monochrome monitor (16 grey levels) w/color graphic emulation • Optional RGB color monitors (16 colors) ($200) • Joystick port • Speaker with volume control • Serial and Parallel ports • 3 PC-compatible, full-size expansion slots • Quartz Real time clock • 16 bit 8086 processor (8 MHz) • 360KB double-sided Floppy drive • Optional Second Floppy drive or 20MB hard drive • CP/M-86 Software compatibility

$799

The Leading Edge® Model "D"™ Personal Computer

- **IBM® -Compatible**
- **FREE** Word Processing Software
- 512K RAM Expandable to 768K
- Dual-Disk Drives
- High-Resolution Monochrome Monitor
- Dual Speed Processor

In Stock Cash Price **$899**

Leading Edge 30 Meg HD

- **IBM-Compatible**
- **FREE** Word Processing Software
- 30 MB HD Disk Drive
- 512K RAM Expandable to 768K
- High-Resolution Monochrome Monitor
- Dual Speed Processor

In Stock Cash Price **$1450**

The Leading Edge® Model "L"™ Series Modems

- For Leading Edge, IBM and Compatible
- Hayes-Compatible
- Auto-Answer Auto Dial

2400B $289.00
1200M $149.95

• add 3% for credit cards

LEADING EDGE
AUTHORIZED RETAIL DEALER

Leading Edge® & Model "D"™ are trademarks of Leading Edge Products, Inc.

Compuworld

Sacramento
916-924-9608

Davis
916-753-3800

Vallejo
707-648-1222

OVER 200 MACROS

Includes: Manual, Template, & disk

PerfectPal™ is a simplified Keystroke Command System for WordPerfect™. PerfectPal™ makes WordPerfect™:

PerfectPal™

Makes WordPerfect® Easy!

Makes WordPerfect® 4.1 & 4.2 Easy to Use and Easy to Learn

EASY TO USE
- **ELIMINATES** memorizing long strings of keystrokes & menu steps.
- **EASY TO REMEMBER** commands in plain English (e.g. copy, move) and single letters (e.g. M to set margins, P to print)
- **REDUCES DEPENDENCE ON** complex manuals.

EASY TO LEARN
- **ORGANIZES** commands logically by alphabet; uses quick find template
- **WATCH** WordPerfect's keystrokes while PerfectPal™ does the work for you.
- **INCLUDES** guide to WordPerfect's keystrokes.

BECOME A WORDPERFECT™ POWER USER
- **FAST EXECUTION** of WordPerfect's commands
- **COMPREHENSIVE COVERAGE.** Over 200 macros.
- **POP-UP INSTRUCTIONS.**

This easy to install, complete MACRO system is fully compatible with WordPerfect and will not interfere in any WordPerfect functions.

System requirements:
IBM Personal Computer or compatible, Hard disk or 2 floppies, WordPerfect™ 4.1 or 4.2

INTRODUCTORY OFFER $39

Includes Quick Guide to WordPerfect's Keystrokes!

$ BACK GUARANTEE
PerfectPal™ GUARANTEES

that if you do not find that it makes WordPerfect™ easier to operate, we will gladly refund your money. This guarantee comes from the manufacturer, who is a dedicated WordPerfect™ user, but became frustrated with all the countless instructions needed to use WordPerfect. For testimonials on how well PerfectPal™ can work, call PC Template at the number listed below.

PC TEMPLATE™
P O Box 9273
Glendale,
CA 91206

CALL NOW!
1-800-334-3030

(VISA/MC accepted by phone 24 hrs/day)

WHAT'S HAPPENING?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

Paperback Software Introduces VP Graphics

Paperback Software (415/644-2116) has introduced *VP Graphics*, a drawing, charting and presentation program that is "object based." *VP-Graphics* can be used to enhance existing graphs from *VP Planner* and *Lotus 1-2-3* spreadsheets, and can import and create graphs from data located in external files. There are pull-down menus, automatic "snap" points, drawing and editing tools, several text features, and support for most of the popular printers on the market today. ($99.95)

New Version Of PAGEr

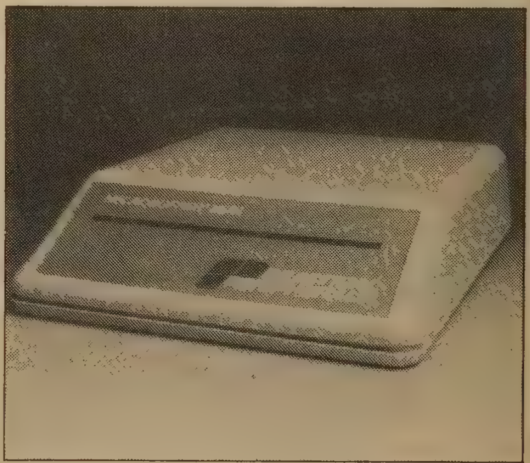
Plummer Research (415/324-8160) has announced *PAGEr 1.5*, a new version of its popular, low-cost desktop publishing package. Added is LaserJet support. The program uses dot matrix printers and requires only 256K of RAM, Even though features such as rubber-band lines and boxes are provided, the program does not require a graphics card. There are newly added setable tabs, a new "static" menu as an alternative to pop-up, and several user convenience items. For dot matrix printer users, *PAGEr 1.5* offers double-high, double-wide characters, suitable for headlines or viewgraphs. ($49.95)

Realworld's Online Upgrade

Realworld Corp., (603/798-5700) has released an online upgrade path from its entry-level package, *4-In-1 Basic Accounting*, to the latest version of its *Accounting Series*. Users can upgrade their data files simply by following an automated online procedure. The company is also preparing to ship a payroll interface package.

Snow Report Writer

Snow Software Corp., (813/784-8899) just released the new *Snow Report Writer*, which can read virtually any file format and has been dubbed the report writer for all software. The *Snow Report Writer* can be used standalone or with data files from popular databases, word processing or business applications programs. The user selects all the data needed to create custom reports, mailing lists, labels, letters, business graphics, to print on custom forms and to do quick or complex queries. ($695)

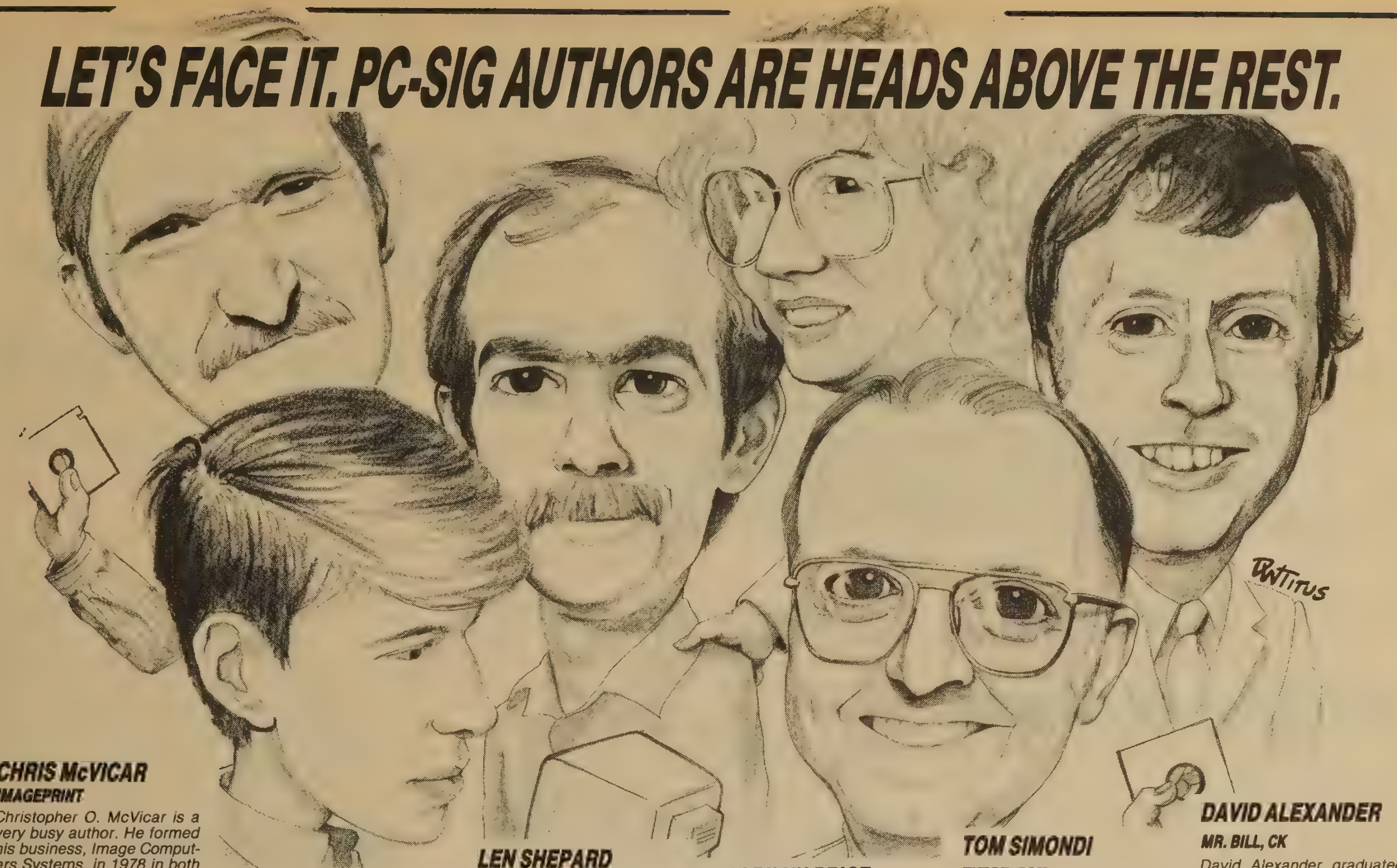


The Microbuffer/Mini 512 printer buffer offers expanded memory and enhanced interface options.

Compact Printer Buffers

Practical Peripherals (818/991-8200) has introduced three new models of its Microbuffer/Mini series of standalone compact printer buffers that feature both expanded memory and additional computer interfaces. The new models, designated the Microbuffer/Mini 512, come with a choice of either parallel to parallel, serial to parallel, or parallel to serial interfaces, and are available with up to 512 K of buffer memory.

LET'S FACE IT. PC-SIG AUTHORS ARE HEADS ABOVE THE REST.



CHRIS McVICAR
IMAGEPRINT

Christopher O. McVicar is a very busy author. He formed his business, Image Computers Systems, in 1978 in both The United States and in England. He still had time to get his degree in Political Science from the University of Connecticut and a Masters degree in Computer Science from Rensselear Polytechnic Institute in 1983. In 1985 he brought to our library IMAGEPRINT (Disk #517) and we are glad he did.

IMAGEPRINT provides exceptional print quality from ordinary dot matrix printers that are IBM Graphics Printer, Proprinter or Epson compatible. IMAGEPRINT characters can be bold, italic, half high, double width, compressed, ten or twelve cpi, proportional, underlined, superscripted and subscripted. Written in C and assembler this program has built-in formatting commands that allow micro-justification of text, automatic header and footer generation and many more useful and important applications for printers.

ALAN FARMER
WILLY THE WORM

Alan Farmer is an author to keep your eye on. As a physics major at the College of William and Mary in Virginia he spent what little free time he had developing programs. Much of his best efforts in programs running from arcade games to mathematical diversions to telecommunications wound up in the public domain.

In the PC-SIG library he is known for Willy the Worm (disk #445). An arcade game similar to Donkey Kong or Lode Runner, but unique in that included is a screen editor to make your own game screens. In the future he is promising the sequel Willy the Worm II...a larger, more challenging and more colorful game than its predecessor. We hope you can take the excitement.

LEN SHEPARD
MONOPOLY PC PCPM

In 1979 Len Shepard authored MONOPOLY PC (disk #475) while running a construction business and using another program he developed PCPM (disk #423). For Monopoly buffs this package is a must. By putting the player in a head-to-head situation with the computer. Matching wits against computer logic in deciding when and when not to buy, mortgage and build. Park Place, look out.

PCPM was developed and still used for consulting and programming construction projects. Its features include: automatic updating of projects ' actual report finish dates, producing reports by subcontractors, scalable Gantt charts and cash flow analysis by early and late projections. If both programs were used in tandem, a person is likely to be unbeatable in Monopoly.

MARILYN PRICE
CHECKBOOK MANAGEMENT

Anyone who has ever had to face the trauma of balancing their checkbook will applaud author Marilyn Price's Checkbook Management Program (disk #393). Presently a computer consultant, Ms. Price, took her B.S. in Math from the University of New Mexico and a B.S. in Computer Science from East Tennessee State University.

The program was originally written for personal use and includes features that are universally familiar. She still uses her program everyday and who wouldn't with features like: entry, deletion and/or correction of all forms of checking account transactions, bank statement reconciliations, automatic check numbering and date entry and customization features. Now if we can just find where we put our checkbook.

TOM SIMONDI
TUTOR. COM

After a career in the Air Force, author Tom Simondi, became a microcomputer systems analyst for a major aerospace firm. Seeing that the job would only fill his daytime hours, he took a position instructing computer students at night. His addition to our library TUTOR.COM (disk #403) was written as an adjunct to a college class he taught in microcomputing.

TUTOR.COM is a condensed course in microcomputing. It holds a wealth of information about computers and specific data on the IBM-PC disk operating system. Users can obtain a general understanding by skimming and in-depth information with careful study. Registered users may obtain aids for authoring their own tutorials. Whether or not you are a student in one of his night classes, if you are interested in computers this is a disk for you.

DAVID ALEXANDER
MR. BILL, CK

David Alexander graduated from Stanford in 1967. He took his law degree from Boalt Hall at the University of California and was admitted to practice in 1971. Apart from being the author of disks #462, 463, 469 and 470, he is the author of two books 'The Chocolate Spy' and 'Fane'.

Software users know him for Mr. Bill. A valuable program that lets you pick the items you want to charge for, enter them in random order and prepare itemized invoices in date order with automatic balance forwarding...to mention just a few of the features of this professional time and billing program. Also, CK, which accepts your income and expenses on up to 9 different accounts and generates reports sorted by income and expense category. Further, a "wild card" sorts by date, name, entry number and amount. A necessary small business manager.

Chris McVicar
☐ **#517 Image Print $6**
☐ **#527 B-Window, C-Window $6**
Alan Farmer
☐ **#445 Willy the Worm $6**
Len Shepard
☐ **#423 PC-PM $6**
☐ **#475 Monopoly-PC $6**
Marilyn Price
☐ **#393 Checkbook Management $6**
Tom Simondi
☐ **#403 TUTOR. COM $6**
David Alexander
☐ **#469, #470 Mr. Bill.................. $12**
☐ **#462, #463 CK-System.............. $12**

New Additions

☐ #635, #636 Muses – organize circulation of manuscripts $12
☐ #642 Menu-Master – General purpose menu utility........................ $6
☐ #643 TASM – IBM compatible assembler for 8048, 8051, and 6502 processors $6
☐ #656 Real Estate Systems – Keep and search for pending/closed sales......... $6
☐ #662, #663 DATABOSS – Data base with report generator $12
☐ #666 S.P.L. – Hybrid mix of structured BASIC with Pascal $6
☐ #678 Golden Wombat of Destiny – Text Adventure from England!.......... $6
☐ #690, #691 BEST-PLAN – Linear programming/planning system........ $12
☐ #696 Qubecalc – 3D spreadsheet. X, Y, and Z axis!........................ $6
☐ #697, #698, #699 FRONT-OFFICE – Sales management $18
☐ #701, #702, #703, #704, DANCAD3D – 3D CAD system w/built-in animation ... $24
☐ #212, #334, #621, #622 – RBBS 14.1A – Start your own BBS........... $24

Old Favorites

Word Processing
☐ #78, #627 PC-Write – our most popular and very powerful $12
☐ #528 New York Word – split screen, mail merge, test buffering $6
☐ #455, #681, #682 PC-TYPE – word processor from Jim Button's $18
☐ #379 Wordstar Aids – useful utilities for color, ASCII conversion and more $6
☐ #480 PC-Outline – comparable to thinktank............................ $6
Spreadsheets
☐ #199 PC-CALC – easier than Lotus but very effective........................ $6
☐ #524, #535 ExpressCalc – Well liked spreadsheet $12
Memory Resident Programs
☐ #405 Deskteam – a phone dialer, notepad, calendar and calculator............ $6
☐ #558 PC-Prompt – memory-resident "Help" commands in an online mode ... $6
Database Management
☐ #5 PC-File 111 – great for creating labels, forms and letters $6
☐ #522 Instant Recall – memory-resident program that stores and retrieves a wealth of information $6
☐ #521 Free File – an easy to use and learn relational DBMS $6
Communication
☐ #310 Qmodem – fast, easy, with windowing feature $6
☐ #499 Procomm – a professional communications program $6
Graphics
☐ #344 , #345 PC Key Draw – sketch on your screen (color graphics card required) $12
Utilities
☐ #133 Ultra Utilities – recover lost files accidentally erased, modify and look into files on a disk $6
☐ #478 Hard Disk Utilities – The best from over 25 disks in the library......... $6
☐ #523 Sidewriter – Prints text files sideways $6
☐ #517 Imageprint – produce letter-quality output on a dot-matrix printer........ $6
Learning Tools
☐ #105 PC Professor – easy way to learn BASIC $6
☐ #510 Visible Pascal – allows you to see your program in operation $6
☐ #424 Pascal Compiler – compiler written in Turbo Pascal................ $6
Entertainment
☐ #293 Arcade Games – The best of. (color graphics card req) $6
☐ #477 Wordgames – stimulates the intellect.............................. $6

SPECIAL
Any 5 Disks plus Directory, and 1-year Membership—Only $39.00 + $4 S&H. (Reg. $50).

Directory and Membership

☐ New Directory Listing Disks 1-705 .. $12.95
☐ 1-year PC-SIG membership ($35 foreign) .... $20 (includes directory, Bi-monthly News Magazine, and more)
☐ PC-SIG Library on CD-Rom (Content of Disks 1-705)..................... $295
☐ CD-Rom Player $995

Most programs have documentation on disk and request a registration fee from satisfied users. Please add $4 postage and handling ($10 foreign) – California residents add state sales tax (7%).

381

Total $________ by ( ) check ( ) Visa ( ) MC
Card No. ________________
Exp. date ____ Signature ____________
Name ________________
Address ________________
City __________ State ___ Zip ______

PC-SIG
1030D East Duane Avenue
Sunnyvale, California 94086
Phone Orders: (800) 245-6717
In CA: (800) 222-2996
For information or local orders call: (408) 730-9291

TurboView

Sublogic Corp. (800/637-4983) released *TurboView,* an *AutoCAD* third party software package which takes a drawing generated by *AutoCAD* and converts it to a high speed assembly language format. It also allows you to view and animate the object in both orthographic and true perspective modes. *TurboView* allows you to view your drawings an average of 40 times faster than *AutoCAD* without the math coprocessor, and an average of 7.5 times faster than *AutoCAD* with the math coprocessor. ($495)

SCriptwriter

The University of Southern California (213/743-5501) has entered the PC software marketplace with the release of *SCript Writer,* a system that permits an author to create educational software. The system was developed at USC with the assistance of IBM. *SCript Writer* contains all of the capabilities normally found in slide presentation systems and in graphic editors. All of the action is described using the programming language called IQ. There is support for animation and sound. ($40)

MACINTOSH

LP Text

London Pride Inc., (203/866-4806) introduced release 2.1 of *LP Text,* special effects software for the Mac. Included in the new release is kerning and halftone screen control. A basic entry screen allows access to PostScript programs, and text can be set around the circumference of any diameter circle with absolute control of letter spacing. A variety of other special effects are also available. ($99)

Target Releases

Target Software, Inc., (1-800 MAC LITE, in FL 305/252-0892) offers a new version of those 3M Post-It Notes for the Mac—*Memorandum.* Users attach electronic "sticky notes" to files and documents, using this desk accessory. The notes can be made to pop up on screen when needed, and can be attached to cells in a spreadsheet, fields of a database or a portion of text in a word processing document. "Note Files" can be shared within a network, "Time Notes" can be attached for a specific time of day and it will pop up on screen. Whole documents can have "Window Notes" attached; "Scratch Notes" are not attached to anything, but can store information that one accesses frequently. Compatible with Mac 512K, Mac Plus, Mac SE and Mac II, priced at $99.95.

Target also released *The Merriam Webster Thesaurus for Microsoft Word 3.0.* Target is so confident that this will be well received that it's offering a money back guarantee. Used with *Microsoft Word 3.0* it contains 45,000 whole root words and produces up to 1.4 million combinations of synonyms. All 45,000 root words include complete definitions. A feature called "Virtual Cross Referencing" permits the user to continuously cross reference from one synonym to another. Available for $59.95.

New Version Of Ragtime Page Processing

Orange Micro (714/779-2772) announced at the Seybold Conference on Desktop Publishing, Version 1.1 of *Ragtime Page Processing. Ragtime* combines advanced page layout capabilities with the most commonly required software for business, including word processing, spreadsheet, and graphics management. The new additions to *Ragtime V. 1.1* will offer automatic page layout, including columns and rules, soft-hyphens in word processing, and the ability to import formatted text from other word processors, such as *MacWrite* and *Word.* It will also offer the ability to import formatted data into *Ragtime* from spreadsheets, especially *Excel* and *Multiplan. Ragtime* has the ability to link up to 350 pages in a single document, incorporating numeric or tabular data within text and graphics. Owners of *Ragtime V. 1* will be provided the new software and documentation at no charge. Price $395.

HARDWARE/ ACCESSORIES/ PERIPHERALS

Signalman Lightning 2400 Baud Modem

Anchor Automation introduced its Signalman Lightning 24 MNP, an intelligent 2400 baud modem with built-in Microcom Networking Protocol (MNP). This unit insures error-free transmissions by retransmitting lost or incorrectly received data and incorporates level 4 technology for such communications. The unit uses all CMOS technology and generates less heat than any other 2400 baud modem.

VIVA Palette

QDP Computer Systems (216/464-6600) announced a new graphics board upgrade, the VIVA Palette, which allows 256 colors to be displayed simultaneously from a palette of over 16 million. The combined use of VIVA high resolution graphics boards and the VIVA Palette board offer the lowest cost alternative for 3D solid modeling on a wide array of monitors, including NEC Multisync, Sony Multiscan, Taxan Supervsion and other variable scan monitors and most 19-inch analog monitors. The board will sell for under $1,000.

Mini-Microspooler

Consolink Corp., (1-800/525-6705) has announced the Mini-Microspooler for low-end spooler/buffering needs. This peripheral can hold about 20 pages of text and make multiple copies; it can be reset at the touch of a single button. Four modes are available: parallel to parallel, parallel to serial, serial to parallel, and serial to serial. ($199)

Galaxy II Tape Backup System

Genoa Systems Corp., (408/432-9090) announced the Galaxy II tape backup system with 120 MB capacity which features support for network connectivity. The Galaxy II can also support stand-alone, single user systems. The company also offers 20-, 50/60- and 60 MB cartridge systems.

Key Tronics Keyboard

Key Tronic Corp. (509/928-8000) has introduced an end-user version of its very successful 101 key keyboard, the KB101. The 101 keyboard operates with all IBM micros and compatibles and features 101-standard keys, including separate cursor and numeric keypads, 12 function keys and LED indicators for the number lock, caps lock, and scroll lock keys. Reliability of the KB101 keyboard has been established by the company at 100 million cycles. ($159)

Manzana 1.44 MB 3.5-Inch Floppy Disk Drive System

Manzana Microsystems, Inc. (805/968-1387) introduced the industry's first high capacity 1.44 MB 3.5-inch floppy disk drive system. It has been designed to allow 80286 and 80386-based MS-DOS computers to maintain disk compatibility not only with existing the 3.5-inch, 720K format, but also with IBM's expected new line of micros. There will be three models: an internal drive, a host-powered external drive, and a self-powered external drive. All three come with the company's *3FIVE* software that allows the drives to access the higher capacity 3.5-inch formats using any version of MS-DOS 2.0 or higher. Pricing is $325, $475 and $595, respectively.

Enhanced Modem From Racal-Vadic

Racal-Vadic (408/946-2227) enhanced its full featured 2400 bps modem line with the introduction of the 2400PA Model 2. Enhancements include front-panel control, an eight-character LCD, a built-in speaker, multi-protocol auto-dialer and ATPlus compatibility. ($795)

Captain 286 Board

Tecmar, Inc., (216/349-0600) expanded its line of multifunction boards with the introduction of the Captain 286 board that combines multifunction features with extended memory support and expanded memory under the LIM EMS standard. The Captain 286 is a low-profile design that allows it to be used in the new IBM XT 286 as well as the IBM AT and compatibles. The board handles memory expansion up to 4 MB on a single-level board using custom-designed 256K SIMM. Prices start at $845 for the 512 K version.

PUBLICATIONS

Programming The Intel 80386

Scott, Foresman and Company (312/729-3000) has just published the first guide to Intel's new 80386 microprocessor. Titled *Programming The Intel 80386,* and written by Bud E. Smith and Mark T. Johnson, this is a complete reference work that any programmer will find valuable. ($22.95)

Inside Macintosh Volume V

Addison-Wesley Publishing Company (617/944-3700) announced *Inside Macintosh Volume V* and the creation of the *Inside Macintosh Library.* The former contains technical information pertaining to the Mac II and Mac SE computers. It supplements the existing *Inside Macintosh Volumes I-IV.* The *Inside Macintosh Library* is comprised of several volumes of technical information about the entire Macintosh family of computers.

NETWORKING AND COMMUNICATIONS

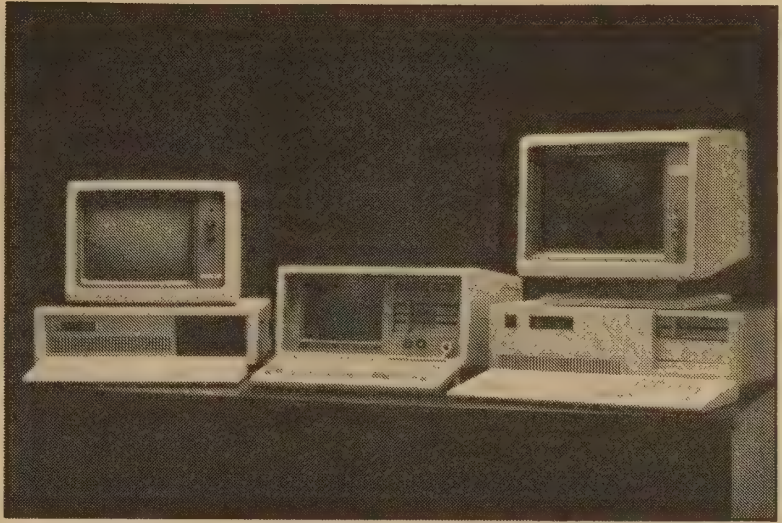
dCom→Link

Fastcomm Systems Inc., (213/306-8592) has debuted a communications program that links data from remote devices and services with leading PC database management packages. Called *dCOM→LINK,* the program enhances *dBASE III Plus, Quicksilver, Foxbase Plus* and *Clipper.* Data from any device that uses a standard RS232C serial port can be captured and disseminated to multiple external ports. ($295)

Archive-Link

General Information Services (215/557-1950) has released *Archive-Link.* This is software that permits disk-to-disk document conversion between an IBM or PC clone and Wang OIS or VS 5-1/4 inch Archive Disk format. Archive-Link supports *MultiMate, IBM DisplayWrite* (I, II, III and IV), *WordPerfect, WordStar, OfficeWriter* and *Microsoft Word.* ASCII and IBM's DCA are also supported. ($375)

We Don't Think Your Performance Should Be Limited By the 'Standard'



PPM-386 SPRINT

(Professional-Purpose Machine)
The 80386 Microprocessor installed in PPM-386 Sprint runs at 16 or 20 MHz. Advanced 32-bit architecture of the 80386 microprocessor delivers increased performance with today's software. It delivers $100,000 minicomputer level performance, which expands the potential of future application such as CAD/CAM, Desktop Publishing, Artificial Intelligence, and multiuser environments. The PPM-386 Sprint can execute all software written for the PC, XT, and PC-AT.

Processor: 16-MHz 32 Bit Intel 80386: Socket for 80387/80287.
I/O Bus Expansion: 2 = 32-Bit, 14 = 16-Bit, 2 = 8-Bit.
Memory: 512 K Bytes of 32-Bit Interleved RAM; 32K Bytes of Phoenix BIOS ROM (Expandable up to 16MB RAM).
Mass Storage: 1.2 MB floppy disk drive; 32 MB Hard Disk with 28-ms access time (44.72, 120MB Optional).
Keyboard: 101-Key IBM RT-Style Keyboard with separate numeric keypad, cursor keys, and 12 function keys.

I/O Interfaces: RS-232C Serial port with male DB-25 Connector; Parallel Port with female DB-25 Connector.
Documentation: User's Manual/Setup Software.
Operating System: DOS 3.2, PC-MOS/386, UNIX, XENIX.
Options: 60MB tape back-up
32-Bit-2 MB Memory card w/2 MB RAM
32-Bit-4 MB Memory card w/4 MB RAM
32-Bit 8 MB Memory card w/8 MB RAM

$3995

Nationwide Service by

CompuShield

PC TECH
PENGUIN COMPUTER TECHNOLOGIES

712 Charcot Ave.
San Jose, CA 95131
(408) 435-9550

PC TECH PRODUCT CENTER
501 D Mendell St
San Francisco, CA 94124
(415) 648-9300

PC—TECH MPC/286 6/8/10/12*

The **PC-TECH MPC/286** personal computing system provides increased IBM-AT compatible computing power, performing 50% faster than traditional 8 MHz AT's. Ideal for general business use, the MPC 286-AT also serves as an extremely powerful engine for applications-oriented workstations, both stand-alone and shared, including desktop publishing business graphics and CAD/CAE. Its design also includes support for increased connectivity and access to shared information as a local area network file server, to manage multi-user environment or as a cluster controller in shared mainframe or minicomputer connections.

- 10 MHz 80286 system unit with zero wait state operation, runs popular IBM—compatible software 50% faster than the 8b MHz IBM PC AT for true productivity improvements, even for the most demanding user.
- Advanced coprocessor socket accepts 10MHz 80287 devices. When configured with coprocessor MPC/286 accelerates mathematics-intensive programs including Lotus 1-2-3 Release 2 applications, Autocad and Versacad.
- 640K RAM with parity checking up to 1024 K on board, 16MB w/expansion card.
- Keyboard-selectable operations at 10 or 6 MHz the ultimate in software compatibility
- Advanced architecture allows incorporation of four asynchronous serial communication ports and one parallel port standard on the motherboard. Only 36 chips on the CPU with the implementation of VLSI (Very large scale integration) technology.
- Eight expansion slots 2 = 8-bit/6 = 16-bit bus.
- Real time clock/calendar provides time and date stamp.
- High capacity 1.2 MB floppy drive standard. (360 Kb optional).
- Choice of 20, 30, 40, to 120 megabyte harddisk drive (optional).
- Optional internal tape unit for rapid back-up of full 20 to 60 megabyte of data on a single tape cartridge.
- Ergonomically designed, the 101 key, low profile keyboard features a separate numeric keypad, dedicated cursor control, and extra function keys.
- Compatible with wide variety of operating systems, such as PC-DOS, MS-DOS, XENIX, UNIX, Multilink advanced, and other versions of Concurrent Dos.
- Compatible with available multitasking and task switching software packages, including Microsoft Windows, Deskview and Topview.

$1495

*12 MHz Optional

P-286-TARGA (Portable)

P-286 Targa is a powerful and versatile portable personal computer that combines Japanese quality, uncompromising capabilities and lightening speed. Reliably engineered, this system provides for exceptional versatility and upgradeability. P-286-TARGA is the smallest and the fastest portable AT compatible computer in the industry.

Processor: 80286-10 MHz (6/8/10). 0/1 Wait state
Memory: 640K of RAM up to 1024K (or 16 mb).
Mass Storage: 1.2 mb floppy disk drive. (360k drive optional).
20 mb hard disk, 40, 80 mb 30 ms. (optional)
20, 40 mb tape back up unit (optional).
I/0 Devices: 1 Serial RS-232 Port.
1 parallel Port.
I/0 Expansion: 4 Expansion slots open.
Monitor: 9″ Non glare High Resolution Monitor. Choice of Amber, Green or Paper white.
Documentation: Users manual. Dos 3.1. Setup Software.

$2495

PV-20 TARGA (Portable)

PV-20 TARGA gives 100% IBM compatibility in less than 28 lbs in a high powered rugged computer. Features an NEC-V20 fast processor giving you twice the speed of Compaq portable IBM XT or equal, 640K memory, 360k floppy drive, 9″ anti glare screen RGB. Serial, Parallel ports. Smaller than Compaq portable.

$995

XT-TURBO

The feature packed model is based on an Intel 8088-2 or NEC-V20 running at 4.77 or 8 MHz. The standard system has a 0/1 WAIT STATE on memory and operates 200% faster than IBM-XT. 640K RAM memory on board, 360 kb floppy drive, Eight expansion slots. AT style keyboard, 150 watts power supply, Clock/Calendar, Serial, Parallel & game port.

$595

ARE YOU A DEALER, A CONSULTANT, A VAR, AN OEM, A MAIL ORDER HOUSE, A MANUFACTURER, OR ANY OTHER FORM OF RESELLER OF COMPUTER PRODUCTS AND PERIPHERALS? IF SO, YOU CAN NOW STOP BUYING AT RETAIL PRICES OR "SALE" PRICES. AS LONG AS YOU HAVE A VALID RESELLER'S PERMIT FOR COMPUTER PRODUCTS, YOU CAN NOW START BUYING AT ROCK BOTTOM **WHOLESALE** PRICES.

SUPER DUPER SALE!!
Store Hours:
Mon-Fri 9-6
Closed Saturday & Sunday

NOTE: We will be closed May 30 through June 5. We will be at Comdex in Atlanta, Georgia!

No If's, And No But's

Just The Best Wholesale Prices!

EFFECTIVE MAY 1, 1987

SEAGATE HARD DRIVES

	QUANTITY 1-10	11-24	25-49
ST225 20-Megabyte (drive only)	$245	$242	$239
ST225 20-Megabyte Kit w/ WD Controller	305	290	285
ST225 20-Megabyte Kit w/ DTC Controller	290	285	280
ST238 30-Megabyte (drive only)	265	260	255
ST238 30-Megabyte w/ WD Controller	359	345	339
ST238 30-Megabyte w/ Adaptec Controller	355	342	337
ST238 30-Megabyte w/ DTC Controller	349	339	335
ST4038 30-Megabyte Full-Height for AT	479	469	473
ST4051 42-Megabyte Full-Height for AT	585	575	565
ST251 Half-Height 40MB for AT	495	475	465
ST4096 80-Megabyte Full-Height for AT	835	825	815

NOTE: All Seagate kits come with controllers, cables, and face plates. All Seagate hard disk drives come with a full-year factory warranty and a 90-day replacement warranty directly from us.

HARD DISK CONTROLLERS

	1-10	11-24	25-49
Western Digital WD1002A-WX1 for ST225	$85	$83	$80
DTC 5150CX for ST225	75	73	70
DTC 5180CX for AT	133	130	127
XEBEC 1255 for AT	122	119	115
Adaptec 2071 (short board) RLL for ST238	115	112	108
Western Digital WD1002A-27X RLL for ST225	115	112	108
Western Digital WD1003-WA2 for AT Drives	165	155	145

NOTE: All controllers are provided with cables.

VIDEO 7 EGA ADAPTERS

	1-10	11-24	25-49
VEGA 7 Deluxe	$298	$295	$290

TOSHIBA FLOPPY DRIVES

	1-10	11-24	25-49
NDO4D (360K w/ Black Bezel for PC/XT	$79	$73	$70
NDO4DE-G (360K w/ Gray Bezel for AT)	79	73	70
NDO8DE-G (1.2MB Kit for AT)	98	95	92
ND354A (720K 3-½" Kit)	105	101	97
Powerdrive 525X 360K External Floppy for Toshiba 1100 + & T3100	**Special**	**$235**	**SPECIAL**

A-B PRINTER SWITCH BOX

	1-10	11-24	25-49
(Uses regular printer cables)	$35	$30	$25

COMPONENTS

	QUANTITY 1-10	11-24	25-49
2-layer XT Turbo Motherboard w/ Erso Bios	$88	86	83
640K RAM card with Zero Memory	38	35	33
I/O Plus Adapter for PC/XT	57	55	53
I/O Plus Adapter for AT	57	55	53
150 Watt Power Supply for XT	47	45	43
Floppy Disk I/O for PC/XT	67	65	63
ELT 286B Baby AT 8/10 MHz w/ Legal Award Bios & User's Guide - no memory	395	385	375
180-Watt Power Supply for Baby AT	85	75	65
Baby AT Chassis	65	55	45
KB-6150 Enhanced Keyboard for XT or AT	69	65	59

MONOCHROME GRAPHICS/ PRINTER ADAPTERS

	1-10	11-24	25-49
100% Hercules-Compatible; for PC, XT, or AT — Works from 4 to 12 MHz Clock Speed; Non-Flicker AT Scrolling; Printer Port can be disabled; Short Card; Nearly Zero Defect Rate; 1 Year Warranty: FCC Certified	$45	$44	$43

MOUSE SYSTEMS PC MOUSE (IMSI OPTIMOUSE) W/ DR. HALO II

	1-10	11-24	25-49
MOUSE SYSTEMS PC MOUSE (IMSI OPTIMOUSE) W/ DR. HALO II	$88	$86	$84

FUJITSU 360K FLOPPY DRIVE FOR PC/XT

	1-10	11-24	25-49
FUJITSU 360K FLOPPY DRIVE FOR PC/XT	$68	$67	$66

SAMSUNG 1252G MONOCHROME MONITOR W/ TILT & SWIVEL BASE

	1-10	11-24	25-49
Amber	$79	$77	$73
Green	77	74	69

PRINTERS

	1-10	11-24	25-49
Panasonic KXP-1091i	$249	$247	$245
NEC P6 — parallel	439	429	419
Epson FX-86E	355	345	335
HP Laser Jet Series II	1795	1755	1695

1. Call for prices for quantities of 50 and up. We will always negotiate and try our very best to beat prices of your present supplier.
2. All products are FOB Belmont, California. Shipping charges are based on the UPS chart. Unless otherwise specified, all shipments are UPS ground.
3. There is an insurance charge of ½ of 1% (or .005 multiplied by the selling price) added to all purchases.
4. All sales are on a cash or cashier's check basis only. At our prices, we cannot afford to take any risks whatsoever. Needless to say, **we do not give terms to any customer.** Personal or company checks will be accepted on a will-call basis only.
5. Add 5% for all visa or mastercard purchases.
6. We must have a valid resale permit on file **before** you can avail of these prices.
7. Same day will-calls are allowed at our Belmont office.

THIS AD SUPERCEDES ALL PREVIOUS ADS, FLYERS, PROMOTIONAL MATERIALS, AND THE LIKE. AD PRICES ARE ALWAYS SUBJECT TO CHANGE WITHOUT NOTICE.

SCI/TECH COMPUTER STORES

"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

1501 EL CAMINO REAL #F
BELMONT, CA 94002
(415) 591-1663

The Lotus Aftermarket—HAL And Beyond

Consortium President Rick Gibson On The World Of 1-2-3

By Jeff Spurrier

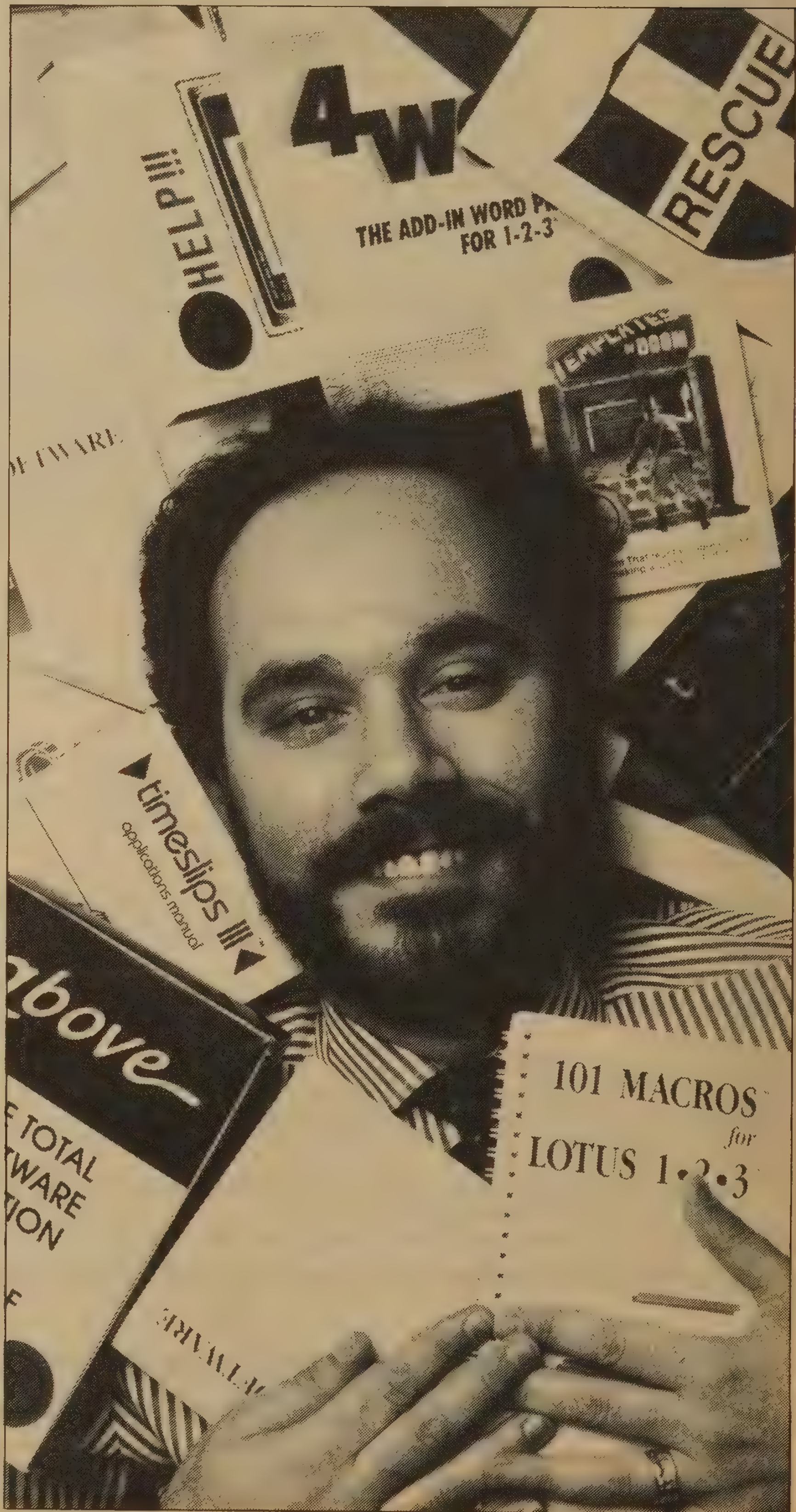


PHOTO: ANN SUMMA

"The problem in this industry is we've got a lot of needy users and a lot of great products, but the channel between them really stinks," says Rick Gibson, the president of The Consortium Inc. "It's like we have the oil in Alaska and the cars in California, but where's the pipeline?"

For many Lotus users, Rick Gibson *is* the pipeline. He was instrumental in the growth of GNP Development, the creators of *HAL*. Now he's the Chairman of the Board of 4-5-6 World, a direct mail/telemarket retailer and wholesaler which sells only Lotus-related products, as well as the founder of The Consortium, a company that functions as an agency for twenty aftermarket developers, some with only one product, others with as many as four Lotus-specific offerings (see sidebar).

Not bad for a guy that admits it's a struggle for him to wade through a *1-2-3* spreadsheet.

"I staunchly protect my reputation as a novice user," he says proudly. "In that way I truly understand all the people in business—the people with desks. I know how they feel."

With the introduction of The Consortium, he hopes they'll feel a lot better when it comes to using Lotus. The Consortium acts as a clearinghouse of Lotus aftermarket information for the entire range of interested parties, from the single user to the developer, corporations to the media. Among the services are free seminars for corporations and user groups, product demonstrations at trade shows, marketing data for members, promotion and publicity, product analysis, aid in product design and funding, dealer training, and a toll-free hotline for users of members' products.

Although barely a year old, the Consortium is riding a crest of aftermarket mania, fueled in part by Lotus' own stamp of approval on the genre. (The company recently announced its own series of spreadsheet enhancement products.) With illegal copying and sharing of programs, Gibson estimates there are probably between four and six million people using the two Lotus spreadsheet programs. The popularity of the programs—particularly *1-2-3*, which has sold over two million copies—has resulted in the creation of what he calls "a core operating environment."

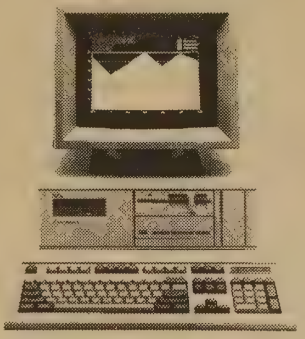
"Lotus *1-2-3* is basically an open-ended system, which can do a lot on its own, but also has the allowance for hooks into it, on which you can add a host of specific applications, enhancements, add-ons, and add-ins," he notes. "I see products from all over the industry, both hardware and software, which have nothing to do with *1-2-3* which claim '1-2-3 compatibility.' Even competitors of Lotus are claiming Lotus compatibility. It's become such a standard."

That standard is what has created the aftermarket demand. The aftermarket is a new player on the software stage, a forgotten stepchild that has suddenly emerged as an attractive source of easy sales and customer satisfaction. Aftermarket prod-

AMERICA'S #1 SOFTWARE DEALER

NEC
NEC Information Systems, Inc.

Take it to the limit.

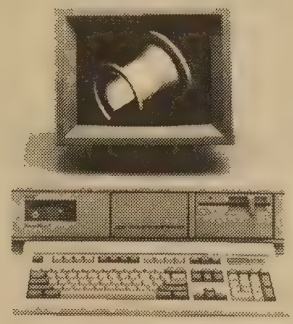


PowerMate™ 1

APC-H202 C

Powermate 1 Base Unit, 20MB Hard Disk, Enhanced Key Board, Multisync Display with EGA Card
Suggested Retail Price

$4,044



PowerMate™ 2

APC-H501C

Powermate 2 Base Unit, 40MB Hard Disk, Enhanced Key Board, Multisync Display with EGA Card
Suggested Retail Price

$5,044

CALL FOR BEST PRICES

The Leading Edge
Infinite Memory System

The Leading Edge Infinite Memory System is comprised of a fully configured Leading Edge™ Model "D"® Personal Computer complete with one floppy disk drive, one Leading Edge™ Infinite Memory Drive, and two 20MB removable Leading Edge Infinite Memory Cartridges.

Together for the first time, these components create one of the most versatile and powerful personal computer systems ever offered.

CALL FOR BEST PRICE

COMPATIBLE WITH THE ORIGINAL IBM® INDUSTRY STANDARD

Leading Edge and Logo and Model "D" are registered trademarks and Leading Edge, Infinite Memory System, Infinite Memory Drive, Infinite Memory Cartridge, and IBM Compatibility Logo are trademarks of Leading Edge Products, Inc, IBM is a registered trademark of International Business Machines Corp. Bernoulli Technology is a trademark of Iomega Corp.

WordPerfect CORPORATION **OKIDATA** **NEC**
NEC Information Systems, Inc.

WHY BUY A MICROCOMPUTER WORD PROCESSING SYSTEM?

Come and see Word Processing Demonstration by Word Perfect, Okidata, and Nec Representatives

CONCORD STORE

MAY 26th or MAY 29
10:30 am

SAN FRANCISCO STORE

JUNE 2nd or JUNE 5th
10:30 am

Drawing for FREE SOFTWARE
Call to confirm Reservation, Space Limited

Software City®

1500 Monument Blvd.
Concord, CA 94520
(415) 676-6662

OVER 100 STORES NATIONWIDE
2 STORES SERVING YOU LOCALLY

155 Main Street
San Francisco, CA 94105
(415) 543-0543

CORPORATE ORDERS PLEASE CALL (415) 676-2516

SOFTWARE PRICED RIGHT

Leading Edge is a registered trademark and Model "D", Model "L" Series and Information System are trademarks of Leading Edge Products, Inc IBM is a registered trademark of International Business Machines Corp Hayes is a registered trademark of Hayes Computer Technology Lotus 1-2 3 is a registered trademark of Lotus Development Corp ucts may be add-ons (which hook onto *1-2-3* applications and data) or add-ins (which operate seamlessly within the *1-2-3* environment). Either way, says Gibson, once a user is firmly committed to the "core operating environment of *1-2-3*," enhancement of the program is the sensible way to go.

"We're not saying 'Go buy *1-2-3* and look what you can do,'" he says. "We're saying, you've moved in this house, you've paid the moving expenses, put all your stuff away. You like it and then you look across the street and you see a house you think is prettier. What you don't do is go across the street and buy that house. Look what you've done to get your own house.

"It's the same with *1-2-3*. You've become married to *1-2-3*. You've got all your data in it, learned how to use it, the other 300 people in your company are using it. So what you do is put up new wallpaper, buy new furniture and appliances, fix up your yard, add a room—those are our add-ons."

The aftermarket that Gibson is focusing on is a variety of enhancements, ranging from the obvious, such as templates, macros and error checking, to "insurance" programs (which aid in getting back a lost spreadsheet), English language command translation, learning *1-2-3*, graphics, decision support systems, mainframe to micro re-formatting, utilities, speed-up and compression programs, "core" products (which link word processing and data base applications with *1-2-3*), and specialized spreadsheet programs (for users in architecture, medicine, and real estate).

It's a healthily diverse field, a validation of Gibson's belief that the Lotus aftermarket is "the largest and most definable marketplace in the industry."

HAL—THE BEGINNING

Of course it wasn't always that way. Before the Consortium, before the entire idea of an aftermarket, there was *HAL*—the most successful and revolutionary add-on yet.

HAL was the product of GNP Development, a bootstrap company started in 1985 by two Caltech graduates, Bill and Larry Gross. And helping them get the word out on the Human Access Language program was Rick Gibson as the company's Marketing and Sales VP—a job he almost turned down.

"*HAL* was a key product," says Gibson. "It proved there was a hell of an aftermarket. [Larry and Bill Gross] weren't as much software developers as they were inventors. They had a retail store that needed an accounting package, so they developed an accounting package (later sold as *CPA+*) to run the business. They decided to market *CPA+*, and that's when I got involved. I was the president of a consulting company. I didn't want to work for any more start-up companies. When I first met Bill Gross, who ran GNP then, I told him I didn't wish to be an employee of a software company. I warned him that most software companies are failures."

With Gibson pushing GNP to move away from a position as simply an accounting software company to a Lotus add-on developer, the small organization soon followed up *CPA+* with a handful of other Lotus-related products. As a result, users began phoning GNP with tech questions—about their own products as well as *1-2-3*.

"I learned there was a tremendous need on the part of the Lotus user for a product for guys like me—guys who could do a *1-2-3* spreadsheet but struggled like heck to get it done," he recalls. "I told Bill 'Most of the Lotus users—not the people like you or the 10% that are power users—are people with desks who wish it was easier and faster. What most people want is just the answers. If they could just type in plain English what they wanted the program to do, they would be delighted.'

"One day Bill called me into the office and he said 'Watch this.' He showed me a bunch of numbers in *1-2-3* in a column and he typed up in a box that said 'Request? at the top. He typed in 'Total column A' And all of a sudden the screen flickered and the total was at the bottom. I just said 'How did you do that? That was incredible!' He explained it was a macro he'd written. I said 'Why don't we start working on products like that?'"

At the Fall COMDEX in 1985, GNP announced *HAL* to a hungry horde of interested buyers (GNP had two 2,000-unit orders even before the product's release). A few months later, Lotus stepped in and acquired GNP, mainly for the purchase of *HAL*. The Lotus version of the program came out last November.

ENTRENCHING THE 1-2-3 STANDARD

Buoyed by the success of *HAL*, Gibson spent three months last spring talking to a variety of Lotus users and add-on developers, testing the water for what would become The Consortium.

"I thought there had to be other products out there that were as good as *HAL*, or half as good, or a quarter as good," he says. "And there had to be people out there developing [Lotus add-on] products that needed help, companies that were small, like GNP had been."

With the contacts he'd formed at GNP (and earlier as a Marketing VP for Nolan Bushnell's personal robot venture, Androbot), Gibson felt he could oil the gears for young developers, providing a link between inventors, users, dealers, investors, the media, and, of course, Lotus itself. Due to his role as "*HAL*'s uncle," he found himself in the unique position of being outside of Lotus and yet accepted as a trusted player in the *1-2-3* world.

"The Consortium got started with Lotus' acceptance, not approval," he says. "Lotus doesn't easily have relationships with third parties they don't own or have a hard-core contract with. I don't think it would have been possible for anyone other than a Lotus employee [to set up The Consortium]. And the problem with an employee that has left the company is that all of a sudden he becomes an outcast and a renegade. What I have done is get involved with the company and gradually shown Lotus that what we're doing is further entrenching the *1-2-3* marketplace. Everything we do makes *1-2-3* even more of a standard."

ENTER THE CLONES

But in the computer world, whenever there's a standard, pretty soon there's a clone that purports to offer the same capabilities—usually for much less. The idea of servicing the *1-2-3* clone add-on market is a touchy subject for both retailers and developers, particularly since Lotus takes a dim view of its imitators.

"Most companies that are interested in playing in Lotus' playground don't want to spit on their toys," notes Gibson. "I'm not knocking products that imitate *1-2-3*, but what you get with *1-2-3* is not just a great spreadsheet but [access to add-on] products that in a lot of cases will only work with *1-2-3*. It's like you buy a Ford and it uses Ford parts. *HAL* is not going to work with a clone."

However, some small developers

PARG And Consortium Issue Study Of Lotus Aftermarket

A recent collaboration between Jan Lewis' Palo Alto Research Group and The Consortium has produced a report on the needs of users in the Lotus aftermarket. According to PARG's Michael Handler, the report will be a useful tool for developers of products for this market—to, he says, "help the vendors identify more clearly who their market really is, and eliminate a lot of waste and trial and error on their part."

Handler explains, "Basically we find that many companies who are attempting to sell into the Lotus aftermarket do not themselves have a clear or defined direction to pursue vis-a-vis their marketing plans, competitive analysis, or even how to roll out and correctly present their product against all the other aftermarket products. With a solid foundation of market intelligence in relating to the needs and desires of Lotus users themselves, these companies would be in a much stronger position, and would be able to focus more clearly on their particular market segment or niche."

In researching the report, PARG and The Consortium first determined, by querying the corporate user base of Lotus products as to whether the need for such a study existed. The overwhelming response was that there was indeed such a need. They also determined, says Handler, "that Lotus users, even though they may already own an add-on product, almost universally have something, or some things, that they would like to do, or would like to have some feature to handle data differently. Where they might have a product that addresses part of their need, the field is still open for many developers to produce new products. This report should fit very firmly into their marketing plan, and help them peruse the market to search for those niches."

No price has yet been determined for the report, which will be released in late May or early June; however, says Handler, "we want to make it comprehensive and affordable at the same time."

What types of products are still needed? Handler suggests that, among other things, products to help users handle large quantities of data, transfer or combine spreadsheets, or import and export data efficiently are likely to be in great demand.

"We view The Consortium as a frontrunner in dealing with this particular marketplace," he says, "and we see a great rise in the interest given to the aftermarket, from all segments of the micro industry. We hope the timing of this study is appropriate, and welcome queries, either to Rick Gibson or myself." (For further information on this study, call The Consortium at 213/390-3403 or the Palo Alto Research Group at 415/960-0556.)

—*Mary Eisenhart*

PC/XT/AT EXPANSION PRODUCTS

IBM XT SYSTEM

Model #268
- 640K Motherboard with 256K
- (1) ½ Ht Floppy Disk Drive with Floppy Controller
- 135W Power Supply
- Enhanced Keyboard

Only $1100

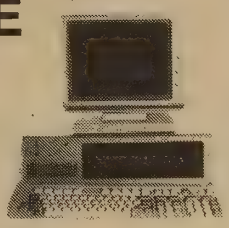
✶✶✶SPECIAL OFFER✶✶✶

Laser Printer
J. Laser Plus for (AT)
Ventura Publisher

Only $3100

TURBO XT COMPATIBLE SYSTEM

10 MHZ SYSTEM
Only $739

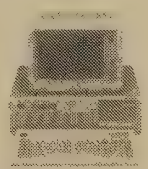


Includes: 640K Motherboard w/case, 150W Power Supply, Keyboard, Floppy Controller Card, 2½ Fujitsu Height Drive, Color Graphics Card or Mono Graphics Card with Monitor, Serial Parallel Clock. (TTL or Composite) 4.77-8 MHz

ONLY $699
Reg $759

Regular XT Compatible Only $660

AT COMPATIBLE SYSTEM



- AT Case
- 1 Meg 6/8 MHz CPU
- 1 Wait State
- 1.2 K Teac Floppy
- Floppy & Hard Disk Controller
- AT Keyboard
- 220W Power Supply
- Mono/Color Graphics

ONLY $1110
Reg $1299

8087-3	105	4164-150/120	.95/1.25	V 20-5	8
8087-2	150	4416-15	2.00	V 20-8	9
80287-6	175	44164-15/12	3/3.50	V 30-8	11
80287-8	260	41256-150/120/100	Call	2764-25	2.60
27512-2	12	4128-15 (Piggy back)	4.00	27128-25	4.50
27C256-20	5.75	68766-35	10	27256-25	5.50
6264 LP-15	3.99	6116 LP3	2.00	8250N-B	7.00
8741A	10.00	8748	10.00	16450N	10.00

DISPLAY ADAPTERS

Color graphic with printer port	$65
Color graphic card (RGB & composite)	59
Color graphic with 3 outlets	65
Taxan EGA Autoswitch	270
Paradise EGA Autoswitch 480	390
Everex Micro Enhancer 1/2 size (Hercules compatible)	200
Sigma Designs, color 400 with Princeton SR 12 Monitor	850
Mono card with PP/Mono graphic with PP	59/75
Mono plus color graphics	85
Everex the edge	230

I/O CARDS

Disk I/O w/game & clock	$70
Disk, 2 ser, 1 par with game & clock, 2nd ser opt.	80
Ser, Par with clock (XT); Ser with par port (AT) by Everex	70/70
Serial or printer card	30/25
Dual game port or clock card	33

MODEMS

Qubie 300-1200 baud - internal/external	$125/135
Qubie 2400 baud - internal or external	250
Everex ½ slot 1200 baud or 2400 baud - internal	110/230

MEMORY UPGRADING

256K memory card with PP with 0K	$55
640K memory card with 0K	38
Sigma Maximizer w/0K Ram or w/384K	140/190
Sigma Maximizer AT w/0K Ram - can expand to 2 meg. Ram	300
Everex multifunction card w/ OK RAM or 384 RAM	100/152
Quadram board w/384K & game	190
AST-6 Pack w/64K & Sidekick sftw.	150
AT multifunction up to 1.5 meg w/0K	135
AST-6 Pak w/64K & Sidekick sftw or w/384K	165/200
AST RAM Vantage up to 3 MB w/0K RAM (AT)	250
AST AT Advantage incl. ser, par w/clock w/128K up to 1.5 MB	385
Piggyback AST AT Advantage card w/512K	320
AST RAM Page with 256K (PC)	285
AST RAM Page 286 w/512K expandable to 2 MB (EEMS) AT	419
Vega Deluxe by Video 7 with 256K	340
Tall Tree J. Laser Plus (PC) or (AT)	410/475
Everex RAM Card (AT) can expand to 3 meg(OK)	139

PC/XT/AT is a registered trademark of IBM Corp.

KEYBOARDS

5150/5050	$60
5060 AT/XT	65
5151 compatible/12 funct enhanc.	80

POWER SUPPLY

135/150/180 watt	$59/69/79
200/220 watt	95/110

MONITORS

Casper/Samsung	$90/85
UBI color/Mitsu EGA	285/410
NEC Multisyn	575
Taxan 770 multi-scan	565

PRINTERS

Citizen 120D	189
Citizen MSP 10	300
Canon Laser Printer 841	1950

MOTHERBOARDS

256K motherboard w/0K - 256K	$80/119
640K motherboard w/0K - 640K	99/159
640K Turbo motherboard, 2 layer with 0K/640K	110/179
640K Turbo motherboard, 4 layer with 0K/640K	130/195
Faraday PC motherboard, 5 slots with 256K	105
Faraday PC motherboard, 8 slots with 2 ser, 1 par, 640K	165
AT motherboard w/1MB-8MHz or 10MHz by Everex	525/575

HARD & FLOPPY DISK CONTROLLER

DTC, Omti, or Western hard disk controller with cables	$90
Adaptec 2070A "Fast" hard disk controller with cables	125
Everex hard disk controller with cables	95
National Comp. hard disk controller with cables	110
WD 1000-50 hard disk controller for gen. purpose	90
Hard disk controller with cables using Western chips	95
Floppy disk controller (for 4 DR/2 DR) with cables	45/33
WD AT floppy & hard disk controller with cables	169
1.2 MB floppy controller with cable (XT)	100
Everex floppy & hard disk controller w/cable	135
20 meg hard card (plus development) 40 ns access time	630

HARD & FLOPPY DRIVES

Toshiba 3½″ disk drive kit (PC or AT)	135
Teac 55BV/1.2 meg for AT-½ height drive	$85/125
Fujitsu M2551A ½ height drive	75
CDC full height disk drive	110
Seagate ST225, 20 meg w/controller & cables	340
Seagate ST238, 30 meg w/RRL type controller w/cables	390
Full height hard disk by Quantum Q540	575
Full height hard disk by Seagate ST4038 (40 MB)	550
Full height hard drive by Seagate ST4051 (50 MB)	640
Teac 20 MB streamer tape drive with controller	500
Sysgen 60 MB streamer tape drive with controller	600

MISCELLANEOUS

AT case/XT fliptop case	$75/33
XT slide-in case/XT & AT look-alike case	39/49
Sigma Chasis-9 slots, 100W PS, 1 pair tranceiver card w/cable	565
Eprom eraser (6 at a time)	43
Logic mouse or 3.2 MS DOS or PC 3.1 or 3.2 DOS	75/75/70/81
Diskette case/AC power surge protect	10
3½″ diskette DSDD	13.95
Precision diskette DSDD	8

MICROWARE EXCELTEK

100 Produce Avenue, Unit E
South San Francisco, CA 94080
PS Airport Business Park
(corner of Airport Blvd. & San Mateo Ave.)
T (415) 952-5375 • Fax (415) 952-3057
Monday-Friday, 9-6 pm Sat-Call first
Canadian orders call (613) 737-5937 for pricing and availability

(415) 952-5375

All Parts 100% Guaranteed

Terms: For shipping & handling charge (under 1 lb.) include $2.50 for UPS Ground. $3.50 UPS Blue. $3.50 for 1st Class Mail COD. CA residents add 6.5% sales tax.

who have trouble getting through to Lotus have no problem working with clones. How individual Consortium members deal with the clone market is up to them, says Gibson.

“In a lot of cases, because some of our members are small, they've not gotten a lot of attention from Lotus, so they go to the clones. They go to Adam Osborne [of Paperback Software, publishers of successful *1-2-3* workalike *VP-Planner*] and ask for help. They've got a 10% chance they may be heard. If they go to Lotus, they've got a 1% chance.”

Retailers are even more likely to look upon clones favorably, he says.

“I think the channels are very fickle. They're not really comfortable with the software business generally, let alone the add-on business. Just as a lot of add-on manufacturers will do anything to get products sold to survive, I think the channels will go to the path of least resistance. There are a lot of retailers in the marketplace, and if they can sell *VP-Planner and* make $100 on it, they'll sell it. It's not a question of loyalty or philosophy, it's a question of margin.”

Enhancements From The Consortium

When it comes to listing the essential generic Lotus add-ons, Rick Gibson immediately cites *HAL*, “because I can't use *1-2-3* without it.” After that, it becomes a tougher call.

“There are products that provide functions, utilities, and there are applications. One product I think would be extremely important would be *101 Macros* (from Macropac International). If you don't want to write macros, its a library. Why don't half of the Lotus users have it?

“If you do spreadsheets, I'd say the *Cambridge Spreadsheet Analyst* (from Turner Hall) which provides error checking and spreadsheet analysis. Another I might consider right away would be something for emergencies, like *Rescue* (from Spectrum Computer Software), because a lot of times you damage a spreadsheet and as a result you can't get it. Also there's *SOS* (from Goldata Computer Services) which automatically saves your spreadsheets for you as you're working on them.”

For more specific needs, The Consortium members offer: *Datasurf* (from Bridge Software—3-D graphics and charts), *Cell/Mate* (from Clarity Software—English documentation and error-checking), *Menu System* (from Cottage Industries — unlimited user-defined, nested menus), *Schedule Graphics* (from Digital Engineering—graphics for project planning, organization and tracking), *Goal Solutions* (from Enfin Software Corporation—decision support systems, up to five parameters), *Quickcode* (from Fox & Geller Inc.—macro library, programming language, debugger) *Quickmac* (also Fox & Geller—allows English-like programs while running *1-2-3*), *Keymac* (also Fox & Geller—lets the user create macros; the package can be purchased as part of *Quickcode* or separately), *Passkey* (also Fox & Geller—a password security program), *Management Control* (also Fox & Geller—a hard disk utility), *Help* (from Goldata Computer Services Inc.—for creation of windowed help screens), *Your Move* (also Goldata—captures data directly offscreen while running one application for use as keyboard input into a second application; includes macro capability), *Ready-To-Run Accounting* (from Manusoft Corporation—for accounting with *1-2-3;* includes general ledger, accounts receivable, payable, and payroll), *Timeslips* (from North Edge Software Corporation—a memory-resident time/billing system with time tracking, reporting and graphics), *Quick Tax* and *Estate Tax* (both from Ryan Software Inc.—tax planning under new tax laws with what-if capability and quick calculation), *Spreadlink* (from Saturn Business Systems Inc.—links mainframes to micros and translates data and reports into spreadsheet format), *Templates Of Doom* (from Solar Systems Software—an interactive *1-2-3* adventure game and tutorial), *Above Disc* (from Tele-Ware West—an expanded RAM memory program without a board), *Note-It* (from Turner Hall—allows the attachment of notes to worksheet cells), and *SQZ!* (also from Turner Hall—compresses data up to 95%), *4 WORD* (from Turner Hall—an add-in word processor for *1-2-3*).

Information on all these products is available from The Consortium, (213) 390-3403.

—*Jeff Spurrier*

Margins are a concern for developers as well as retailers. For this reason, Gibson says The Consortium is not a democracy or an association. The company makes an effort to avoid representing developers who are rivals in the marketplace. The Consortium can't be all things to all people.

“Esther Dyson once warned me to take a stand,” he says. “She said ‘You should be the Procter and Gamble of the software industry and enable these companies to have the power behind them to get noticed.’”

STRATEGIES FOR THE LOTUS AFTERMARKET

Getting noticed means not only increasing sales, but, in some cases, finding investors for struggling software developers. Rather than provide a shield for independent manufacturers who are fearful of being bought up, The Consortium may be a way to locate a friendly suitor. Being a conduit between manufacturers, publishers and users is the core of Gibson's crusade, and he makes it clear that while his door is open to developers with good ideas—“I want to go on record as being in the market for the next *HAL*,” he says—developers have to remember their role is a reactive one.

“*HAL* was a reactive product,” he says. “It was made because people needed it. My goal is to get more manufacturers to do even informal research to find out what Lotus users need. [Products must be] market driven as opposed to marketing driven. It's so much easier and cheaper, and you get richer when you make products that people need, rather than when you have an egotistical brainstorm for a product and you go bullheaded forward, raise $5 million, and then find out no one wants it.

“*Javelin* is an example. What a wonderful product. But they tried to tell millions of PC users they should change from *1-2-3* to *Javelin* or buy *Javelin* instead. And I don't know if they even have 3% of the market *1-2-3* has.”

In an attempt to find out just what Lotus users need, The Consortium has recently finished a market research project with the Palo Alto Research Group focusing exclusively on the Lotus aftermarket. (See sidebar.)

INTEGRATED APPLICATION PACKAGES—CLOSE, BUT...

Ironically, one company that could have benefited from such information was Lotus itself. The much ballyhooed introduction of *Symphony* seemed to spell the end of *1-2-3*. The integrated applications of the program were seen as an answer to the add-on needs of the Lotus user. Unfortunately it raised more questions than answers.

“I'm not a *Symphony*-phile,” says Gibson. “I think what was being invented sounded good. The problem is that integrated products typically are strong in one area and weak in others. The reason I like add-ons is that they're easy to sell, they're inexpensive. They serve a specific purpose and people get value out of them right away. All we're talking about is accessories. People love accessories. With *Symphony* they tried to reinvent the wheel; they made a pretty good wheel but unfortunately everybody already had the original, and everybody was using it and liked it. A lot of people said, forget that new wheel. I'm going to look for hubcaps and better tires.

“That basic wheel is incredibly powerful and open ended. Rather than have you give me a whole contraption that does everything—I have to accept your word processor—let me choose the accessories. When I buy a suit I pick my own suit and ties. I don't go in and they tell me which shirt and tie goes with something. I might get a little ticked off if I had to buy suits like that.”

Charitably, he says that he doesn't think that *Symphony* was a move by Lotus to take over the add-on market, merely an attempt “to make a new invention, to take *1-2-3* one step further.”

And just because *Symphony* has failed to replace *1-2-3*, that doesn't mean that integrated programs are doomed to failure, unable to battle effectively with the guerrilla tactics of add-on suppliers.

“I feel in my gut that a number of years from now there will be integrated software again,” he says. “I think it was too early. They couldn't truly integrate the best spreadsheet, the best word processor, the best data base, and do it all in one product and make them all as awesome as *1-2-3*. The technology didn't exist to do that. I think it's a hardware limitation which created the lack of capabilities in developing the software.

“I've been in this industry five years, and before that I was in the consumer electronics business, and I watched compact stereos become integrated packages in cabinets, in one unit. I think that a number of years from now there will be integrated packages. These add-on packages are the bridge to 1992. A few years from now there will be great integrated software packages, and right behind them will be add-on products to go with them.”

Even if Lotus did come out with the add-on killer integrated package, The Consortium would still have its finger in the software pie. In May the company began a new division aimed at the data base add-on market.

“There will always be an add-on market,” says Gibson. “Make a product that has a lot of users and there will be people who have other needs that aren't fulfilled, and there will be inventors that see new things that can be done. And those two groups—with the help of people like myself and the channels and the media—will find each other.” ☐

U.S. Manufactured IBM AT COMPATIBLE
10 mhz Systems From $1399
XT Compatible Full Monochromes
Systems from $699
With One Year Warranty & FCC Approved

WE DEAL IN AT&T, IBM, COMPAQ, HP & AUTOCAD

IBM AT $3395
512K, 1.2MB FL, 30MB H/D MONO MONITOR, MONO ADAPTER

IBM AT 339 $4095

30MB HD, 8 MHZ

COMPAQ 286-
(12MHz) 30 MB Hard Disk Monochrome System

$2895

WYSE AT 286
640K RAM, 1.2 FL Drive, 40 MB H/D, SER/Par, Clk/Cal, Monitor+, Keyboard + MS DOS + GW Basic

$2399

WYSE PC PLUS ALSO AVAILABLE

SHARP PC 7100A
768K RAM, 1Fdd, 20MB (28MS) Hard Disk, Super Twisted, Screen

$2029

SPERRY PC MICRO IT
512K RAM, 20 MB H/D Monitor & Controller, Keyboard Plus MS DOS/GW Basic

$2775

COMPAQ 386
1MB RAM, 1.2MB Floppy, 40MB Hard Drive Complete Mono system

$5145

Other Model of 386/286 Also Available

We are Authorized Dealers for AutoCAD. We provide you with complete CAD Systems, including Digitizers, Plotters & Hi Res Monitors.

INTEL 386 System also available/NecMulti Sync + VEGA Deluxe $928

ZENITH Z-181 LAPTOP/TOSHIBA . . . . **.CALL** • NEC LAPTOP MULTI SPEED . . . . **.$1425**

PRINTERS

TOSHIBA P321SL/351	**CALL**
CANON LASER	**1834**
HP LASER/PLUS	**CALL**
HP PLUS 500/Series II	**CALL**
QUAD LASER	**CALL**
XEROX COPIER/LASER	**CALL**
ALPS	**CALL**
CITIZEN PREMIERE 35	**455**
DYNAX XL 25/35	**489/749**
EPSON 85/286	**375/539**
EPSON LQ 800/2500	**535/CALL**
FUJITSU	**CALL**
IBM PROPRINTER/XL	**389/587**
QUIETWRITER	**1199**
JUKI	**CALL**
OKIDATA LASER (ON DEMO)	**CALL**
PANASONIC	**CALL**
CITOH 310/315	**495/745**
OKIDATA—SPECIAL PRICE	**CALL**

PLOTTERS & DIGITIZERS

HP/JDL/IBM OTHERS	**CALL**

BOARDS

QUADRAM EGA +	**399**
VEGA DELUXE 7	**369**
EVEREX EGA	**199**
NEC EGA GBI	**CALL**
GENOA SUPER EGA	**CALL**
PARADISE ASWITCH/480	**369/CALL**
IBM MONO/COLOR	**199/210**
AST 6 PACK +/ADV	**179/365**
ORCHID	**CALL**
HERCULES MONO/COL	**199/155**

MONITORS

AMDEK 410-A/722	**169/545**
IBM MONO/COL	**230/499**
NEC MULTISYNC	**CALL**
PGS MAX-12/HX-12	**159/409**
QUIMAX	**CALL**
SAMSUNG/EGA	**89/CALL**
KF MONO/3 in ONE	**115/369**
NANAO	**CALL**
WYSE TERMINALS	**CALL**
SONY MULTISCAN	**CALL**

SOFTWARE

LOTUS 123	**299**
WORD PERFECT 42	**215**
REFLEX	**99**
NORTON UTILITIES	**69**
dBASE III PLUS	**395**
VENTURA/PAGEMAKER	**CALL**

HARD DISKS

20 MB File Card (WD)	**599**
20 MB Plus CARD	**699**
20 MB FIXED DISK CARD	**395**
20 MB ST 225 KIT	**399**
30 MB ST4038	**625**
42 MB ST251	**690**
80 MB ST4096	**CALL**
CORE INT (28MS)	**CALL**

TAPE BACKUP SYSTEMS

20MB/60MB	**545/599**
20MB/60MB EXT	**699/799**
BERNOULLI BOX	**CALL**

MODEMS

HAYES 1200B w/SOFT	**349**
HAYES 1200B EXT	**389**
COURIER 2400 EXT/INT	**499**
EVEREX 1200B/2400B	**139/229**
US ROBOTICS	**CALL**
PROMODEMS	**CALL**
PACKARD BELL 1200EXT/INT.	**210/200**
PACKARD BELL 2400EXT/INT	**379/369**

ALL SOFTWARE AVAILABLE AT VERY ATTRACTIVE PRICES

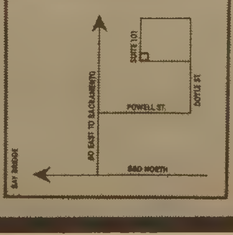
• On Site Installation & Set Up • On Site Upgraders •
• Call for Service Contracts for existing systems •
Rentals, Leasing, & Extended Warranties Available.

MICRO-TECH INTERNATIONAL

5835 Doyle St., Suite 101, Emeryville, CA 94608
Tel: (415) 658-1433 — FAX (415) 658-7339
Lots of **FREE** Parking Available

HOURS — M-F 9-6PM
SAT - 10-5PM • CLOSED SUNDAY

All prices reflect 3% cash discount.
Prices subject to change without notice.



Spreadsheet Pitfalls—And How To Avoid Them

By Robert Moskowitz

> ***Even Lotus Development recently admitted that 30% of all worksheets are tainted with unsuspected flaws, and that, since corporations generally combine several worksheets to pass data to the next higher level, the probability of human errors in the worksheets delivered to the corporate leadership is a near-certainty.***

Although corporate financial managers and multi-national division presidents often seem more highly trained and capable than the average working person, countless books and motivational specialists remind us that they are fallible mortals, just like the rest of us. One important new way we are reminded of their fallibility is by the type and frequency of errors these business leaders inadvertently build into their electronic spreadsheets—just like the rest of us.

By some estimates, human errors can be found in up to 70% of all electronic worksheets. This may be overstated, but even Lotus Development, in its *Lotus* magazine, recently admitted that 30% of all worksheets are tainted with unsuspected flaws, and that, since corporations generally combine several worksheets to pass data to the next higher level, the probability of human errors in the worksheets delivered to the corporate leadership is a near-certainty.

Most organizations prefer not to admit any problems with human errors in their worksheets, but word is beginning to circulate anyway. One shipping company, for example, grossly overstated its earnings in a recent quarter because of a simple error in a spreadsheet. A manufacturer's worksheet miscalculated raises intended for every employee in a department, while a retailing firm relied for its budget plans on a worksheet total that did not include some important line items. Recently a well-publicized lawsuit involved a construction company which won a contract on an extremely low bid. Imagine someone's embarrassment when they discovered the worksheet used to calculate the winning bid was badly constructed and had yielded a figure $250,000 too low! As you might imagine, the courts decided that the spreadsheet software is not to blame for the errors—the people using it create the problems and cause the damage.

Fortunately, these human errors in electronic worksheets don't have to remain undetected for very long. If spreadsheet users—and in corporations, the people responsible for supporting them—will only take normal precautions, the errors will dry up fast. For users, this entails routine error checks, and sometimes constructing error-check formulas in worksheets to validate their accuracy. For management, this entails alerting users to the dangers of uncaught errors and teaching them how to prevent the problem.

REASONABILITY CHECKS

The simplest method for catching human errors in worksheets is a "reasonability" check. The idea is to see very quickly whether or not the worksheet produces reasonable answers to typical inquiries. A "reasonability" check begins by entering fairly small, regular numbers like .1, 10, or 100. Then, with an eye on the critical answers the worksheet generates, users will double, triple, halve the numbers, and vary them in other simple, predictable ways. If the answers change in reasonable ways, the worksheet passes this test.

A "reasonability" test will catch many errors like a formula referencing (or taking values from) the wrong cell or written incorrectly, or a value with a misplaced decimal point. These and other errors are difficult to catch by looking at worksheet details alone.

One of the best methods of error checking an electronic worksheet is to use it to calculate known data. For example, a mortgage repayment worksheet can be compared against mortgage repayment tables or several known mortgage contracts. If the worksheet gives the answer we know to be correct, it is probably valid. If it offers different results, the worksheet warrants further inspection.

CROSS FOOTING

A more formal error checking method is called "cross footing." Primarily meant to validate accounting- or budget-oriented worksheets that display related sets of numbers in columns and rows, "cross footing" is the technique of comparing column totals with row totals to make sure they agree. The simplest method is to create a "sum" of the column totals and "sums" across corresponding rows, and to compare.

In a simple monthly budget, for example, the total spent across the rows for postage, for paper, and for pencils should agree with the column total on office supplies. In more complex worksheets doing inventory control, accounting, and other applications, the comparisons must be more selective, and there must be more of them. But the technique still provides an important way to flag mathematical and data entry errors. One way to simplify checking many "cross footing" comparisons is to reserve a section of the worksheet for subtracting the corresponding totals. When all the numbers are correct, the reserved section consists entirely of zeros. Any other digit stands out like a sore thumb and is a clear sign of an error.

SPREADSHEET AUDITING SOFTWARE

More detailed checks for errors are best accomplished with the help of "spreadsheet auditing" software. There are many of these programs commercially available, and some electronic spreadsheets — such as Microsoft's *Multiplan*—are now delivered with auditing features built in.

The auditing software quickly performs as many as fifty different checks on a worksheet and can display or print the results. For example, spreadsheet auditing software can pinpoint one of the most common errors in a worksheet: a formula referencing just part of a complete range (or group) of cells.

Partial range references often develop as users build worksheets through trial and error. They define a range of, say, half a dozen rows containing information such as sales costs, and then refer to that range in a formula calculating something such as profitability. Later, they will add new rows of additional sales costs. But unless they are careful, those new rows are not automatically included in the formula reference, and the profitability figure does not take them into account.

You don't need spreadsheet auditing software to avoid this, incidentally. One technique is to include the title of a range in the formula reference. The title words don't interfere with worksheet calculations, but they leave room for adding new rows within the pre-defined range where they are automatically added to any references.

Spreadsheet auditing software is built to check all formulas and their references, and to note where a reference does not include all the cells of a contiguous group. This is not always an error, of course, but the auditing

---

Copyright ©1987 by Robert Moskowitz. All rights reserved. Robert Moskowitz is a business consultant based in Woodland Hills, CA. His background includes numerous articles published in a variety of national magazines. He is the developer of the computerized Personal Productivity Audit.

Tulin Corporation

A DISK DRIVE MANUFACTURER

5.25″ HALF HEIGHT DISK DRIVES
for PC/XT & PC/AT

30MB	RLL	85ms	$275
48MB	RLL	85ms	$380
30MB	RLL	40ms	$475
48MB	RLL	40ms	$500

5.25″ HALF HEIGHT DISK DRIVE KITS
for PC/XT & PC/AT

20MB+Controller	85ms	$357
30MB+Controller	85ms	$400
48MB+Controller	85ms	$485
32MB+Controller(AT)	40ms	$625
48MB+Controller(AT)	40ms	$689

CONTROLLERS

Hard Disk Controller for XT	$ 85
Hard Disk Controller RLL for XT	$114
Hard Disk Controller for AT	$136
Hard/Floppy Disk Controller RLL for AT	$203
Hard/Floppy Disk Controller for AT	$189
Hard (2)/Floppy (4) Disk Controller for AT	$217

TEL. 408-432-9025

FAX 408-943-0782

TELEX 499-4365

180 Days Limited Warranty - Parts & Labor

Tulin Corporation 2393 Qume Drive San Jose, California 95131

Over 2 years of experience with Desktop Publishing on the IBM/PC has prepared us to present...

Classes

- **Ventura Publisher - Beginning**
  Ideal if you've just started using the program, or if you want hands-on experience with it to help you decide if it is the right program for your needs.
- **Ventura Publisher - Advanced**
  Covers advanced techniques for users who have mastered the basics.
- **IBM/PC Desktop Publishing**
  A complete, hands-on overview for decision-makers. Covers graphics, word-processing and desktop publishing software, and all associated hardware, plus planning strategies.
- **Microsoft Word - Advanced**
  Covers in-depth use of style sheets, and other specific techniques for getting the most impressive results with laser printers.

THE LASER EDGE

360 - 17th Street, Suite 203
Oakland, CA 94612

(415) 835-1581

Only 5 students per class. All students provided with AT-speed computers for hands-on practice. Classes are repeated frequently. Call us for the current schedule.

Call NOW to Register!

Ventura Publisher™ - Ventura Software, Inc.
Microsoft® - Microsoft Corporation
IBM® - International Business Machines, Inc.

EASY ACCESS TO
QUALITY
"San Francisco's Oldest Independent Computer Store"

ATARI 1040 ST SYSTEM
POWER WITHOUT THE PRICE
Includes:
1 MB RAM
Built-in 720K drive
Parallel/serial/midi ports
Color Monitor
with Mono Monitor only $749
only $929

ATARI 520 ST SYSTEM
Color Monitor Only $749 Mono Monitor Only $539
ATARI 20 MB HARD DRIVE only $599
ST SOFTWARE SPECIALS
Publishing Partner 99
Graphic Artist............129
VIP Professional..........159
Wordwriter ST 55
Datamanager ST 55
Swiftcalc ST..............55

EPSON EQUITY COMPUTERS
EQUITY I
With 2 360K floppy drives, monochrome monitor
Only $689
EQUITY II
With 2 360K floppy drives, monochrome monitor
Only $1395
Actual system may vary from illustration.
EQUITY III+
Complete system includes
40 MB hard disk!
Only $2495

PRINTERS
EPSON
LX-86..................179
FX-86E................319
FX-286E...............449
EX-800................389
EX-1000...............519
LQ-2500...............929
LQ-800................469
LQ 1000...............669
Citizen 120D 199
Premiere 35.......489
Panasonic 1091i 309
1092i 399
3131 299

SONY MONITORS
KV-1311 CR RGB monitor plus remote control TV...............479
CPD-1302P multiscan EGA with cable & stand 649

IBM SOFTWARE
LOTUS
1-2-3 295
Symphony 429
HAL 109
Manuscript.............359
Metro..................65
PFS: Pro Write...........119
PFS: Pro File 149
PFS: Pro Plan............149
PFS: First Choice 109
Harvard Presentation Graphics................239

4720 Geary Blvd • San Francisco • 415-751-2231
Access to software
HARDWARE SYSTEMS SERVICE

No auditing software can identify the most insidious human errors that creep into electronic worksheets: misplaced decimal points, poorly conceived formulas, inaccurate data, and erroneous assumptions.

software brings all such cases the user's attention and lets him or her decide if every reference is correct.

Another very common worksheet error is to copy a formula along a row or column, but mistakenly replace the formula in one of those cells with a fixed value. For example, users often copy to dozens of cells a simple reference to the previous cell in a row or column. When this is done, changing the value in the first cell immediately changes all the cells. It is also common to copy formulas in worksheets calculating repetitive transactions such as mortgage or auto loan repayments.

In either case, the user—mistakenly or not—may replace the formula in one of the cells with a fixed value. If the formula is not restored, the fixed value throws off all subsequent calculations with that worksheet. Spreadsheet auditors quickly detect and point out errors of this type, where a range of cells containing formulas copied in sequence is interrupted by a single fixed value cell.

Another pair of common errors in worksheets are circular and reverse references. A circular reference involves two or more formulas that derive their input values from each other, rather than from fixed numbers typed into the worksheet. Circular references are necessary in some complex calculations, but are more often a mistake unknowingly built in by the user. A related error is the reverse reference, where a formula refers to a cell that is calculated after the formula's cell. Either condition can create problems because each worksheet recalculation produces results based on the previous—not the current—values of the reference cells. In some situations, the formulas never "settle down" to a final answer. Spreadsheet auditors automatically identify all circular and reverse references, so the user can correct those not wanted before they lead to problems.

BEYOND AUDITING: INSIDIOUS ERRORS

The advantages of spreadsheet auditors are numerous: they work rapidly, they perform many checks, they are thorough, and, perhaps most importantly, they provide a literal evaluation of what the worksheet actually contains, not what its human developer intended or expects it to contain. But spreadsheet auditors are not the final answer to human errors in electronic worksheets, any more than spell-checking programs are the final answers to typographical errors in documents.

No auditing software can identify the most insidious human errors that creep into electronic worksheets: misplaced decimal points, poorly conceived formulas, inaccurate data, and erroneous assumptions.

In many situations, the only way to find these errors is to look for them specifically. There is no substitute for line-by-line checking of the input values entered, for example. Poorly conceived formulas and erroneous assumptions can only be detected by careful, thoughtful analysis.

For single users, worksheets that fail "reasonability" tests and that do not agree with known results should be carefully checked, cell by cell.

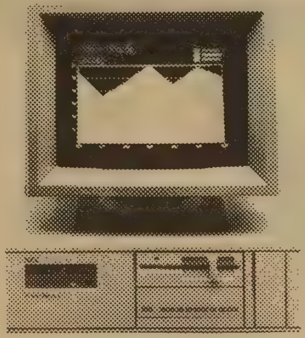
Users in job situations are luckier. They can ask a colleague who has not helped develop the worksheet to check it over. This is, by far, the best error checking method, because the one who conceives and develops a worksheet, like a proud parent, is often unable to see its flaws, weaknesses, and errors. The unemotional error checker, however, will often question every assumption in the worksheet, consider other ways to calculate particular values, and generally check all values and formulas. As a rule, they will usually find flaws in the worksheet the developer might never recognize.

Spreadsheet software today has become so easy and powerful that electronic worksheets are now larger and more complex than ever before. This makes them considerably more useful, but also leaves them more prone to human errors. The danger of human errors in worksheets will probably never go away, but it can be controlled if people will remember that computers are just fast, fancy calculators. It is we, the people who use them, who must be responsible for accuracy in the numbers we rely on. □

Take it to the limit.

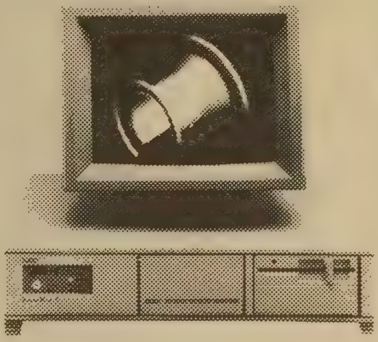
INTRODUCING NEC APC IV™ ADVANCED PERSONAL COMPUTERS – THE NEW POWER IN AT®-CLASS PERSONAL BUSINESS COMPUTERS.

APC IV


PowerMate™ 1

The APC IV PowerMate 1 has outstanding speed, memory and storage capacity, with a wide range of options so you can tailor the system to your exact needs. It uses both 5 1/4″ *and* 3 1/2″ disks for greater speed, economy, and exchange of data with laptop systems.

The APC IV PowerMate 2 sets new standards of performance in the 80286 environment. With its speed and memory capacity (640KB expandable to 10.5MB), you can store more data, crunch more numbers, and run memory-hungry software more quickly than ever before.


PowerMate™ 2

See the APC IV today at CalSoft — an NEC Authorized Dealer!

NEC

CALSOFT

290 Battery Street
San Francisco, CA 94111
(415) 397-6901
M-F 9:30 - 5:30

NEC

APC IV and PowerMate are trademarks of NEC Corporation. AT is a registered trademark of International Business Machines Corporation.

LOOKING FOR COMPUTER FURNITURE . . .

COMPUTER ROLL TOP DESKS

DESIGN, QUALITY & SECURITY
Designed to give you the best usage of space while making your components accessible and functional.

Compatible with most major computers.

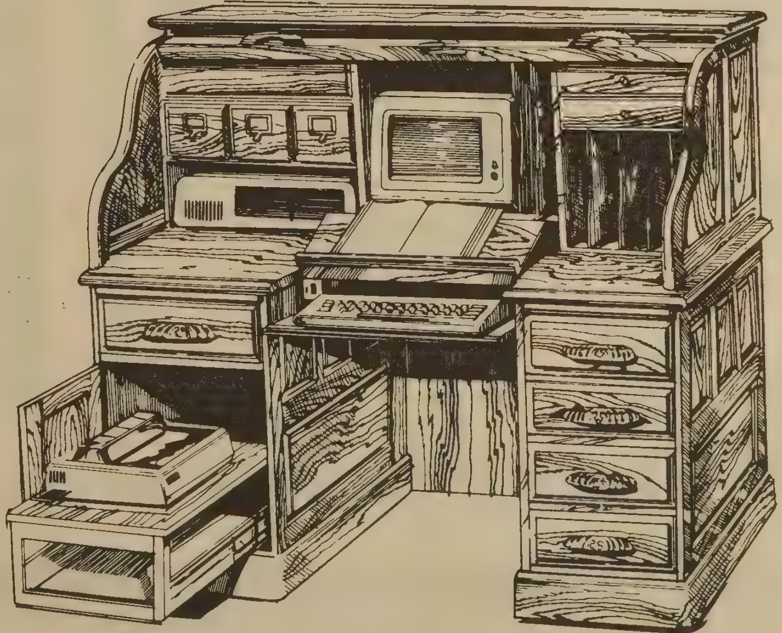
Expertly handcrafted of solid oak and oak veneers, available in light and dark stain with durable lacquer finish.

Various models and sizes available.

MODEL SHOWN INCLUDES:

- Built-in surge protector
- Automatic locking device
- Drawer accommodates letter or legal files
- Solid oak dividers in drawers
- Oak pencil trays
- Flip-up copy holder
- Disk storage in cubby hole section

COME VISIT OUR SHOWROOM SOON!



COMPUTER FURNITURE

C · O · M · P · A · N · Y

1313 El Camino Real, Belmont, CA (415) 592-7584

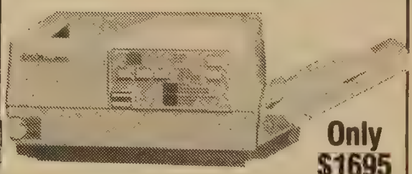
OPEN MON-FRI 9-5; SAT 10-5

Breakthrough '87

BREAKTHROUGH VALUE
BREAKTHROUGH PRODUCT
NOW AT
MANAGING
TECHNOLOGY

NOW– THE LASER FROM THE LEADER

THE **EPSON**® GQ-3500
LASER PRINTER



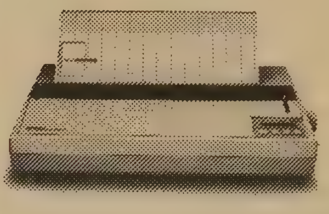
Only $1695

- Compact new laser printer delivers incredible high resolution output on all types of paper for crisp text and graphics
- Epson SelecType IV control panel allows instant access to eleven popular printer functions
- Seven built-in fonts, convenient paper handling and a color option make this one of the most versatile printers you'll ever use

"CLASS ACT."

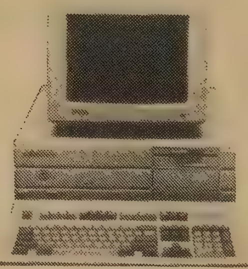
– PC Magazine, November 11, 1986

THE **EPSON**® LQ-2500
DOT-MATRIX PRINTER



- 24-pin printhead for high resolution output
- Prints 324 characters per second in draft mode; 405 characters per second ultra-high speed mode; 108 characters per second Letter Quality mode
- Advanced Epson SelecType III LCD control panel prompts, confirms and stores print modes and font settings

EPSON® EQUITY III +



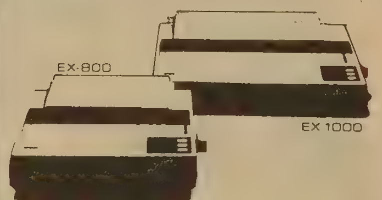
- 6.8.10 Mhz 80286 Processor
- MS DOS 3.2
- Western Digital Hard Disk Controller
- 101 Key Enhanced keyboard (Same as IBM)

Monitor & video board not included

"BETTER-THAN-EVER RESULTS."

– PC Magazine, November 11, 1986

THE **EPSON** EX-800 AND EX-1000
DOT-MATRIX PRINTERS

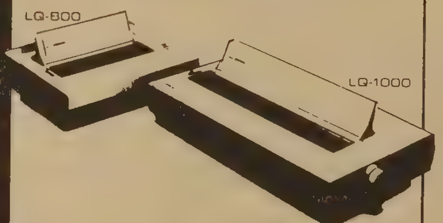


- Prints draft mode at a fast 300 characters per second. 60 characters per second in Near Letter Quality mode
- New Epson SelecType II feature lets you choose from eight different typestyles at the touch of a button
- Versatile paper handling with Automatic Sheet Load and Push Feed Tractor

EDITOR'S CHOICE.

– PC Magazine, November 11, 1986

THE **EPSON** LQ-800 AND LQ-1000
DOT-MATRIX PRINTERS



- High resolution 24-pin printhead for outstanding letter quality output
- Prints 180 characters per second in draft mode, 60 characters per second Letter Quality mode
- One-touch fingertip selection of Letter Quality or draft print mode
- Built-in parallel and serial interface
- Built-in 7K buffer increases productivity
- One-year limited warranty

EPSON®
COMPUTERS
PRINTERS

CALL FOR THE BEST PRICES IN THE BAY AREA!
Buy from the #1 Epson Systems Dealer in San Francisco!

Managing Technology
"Builds Business Success"

4411 GEARY BLVD.
San Francisco
CA 94118
(415) 386-2700

Authorized Epson Dealer. Epson is a trademark of Epson America. HP Laserjet is a trademark of Hewlett Packard.

The Leading Edge® Infinite Memory System™

The Leading Edge Infinite Memory System is comprised of a fully configured Leading Edge Model "D"® Personal Computer complete with one floppy disk drive, one Leading Edge™ Infinite Memory Drive,™ and two 20MB removable Leading Edge™ Infinite Memory Cartridges.™ Together for the first time, these components create one of the most versatile and powerful personal computer systems ever offered. systems ever offered.

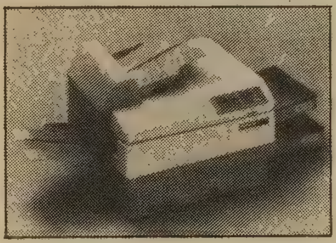
Call for best Leading Edge prices!

Leading Edge and logo and Model "D" are registered trademarks and Leading Edge, Infinite Memory System, Infinite Memory Drive, Infinite Memory Cartridge, and IBM Compatibility logo are trademarks of Leading Edge Products Inc, IBM is a registered trademark of International Business Machines Corp.

COMPATIBLE WITH THE
ORIGINAL IBM®
INDUSTRY STANDARD

FREE Ventura Publisher & Mouse

10 PPM Dual Bin PagePrinter



- Dual input cassettes holding 250 sheets each
- Selectable face up/face down output with capacity of 150 sheets.
- Manual feed of transparencies, envelopes, & labels.
- Easily handles letter, legal and A4 paper size.
- Four port multi-user interface (optional).

Only $3695

Industry Standard Emulations

Code Compatibility (standard) with:

- HP LaserjetPLUS
- Epson FX
- Qume Sprint 11
- IBM Proprinter
- Diablo 630

Variety of Fonts & Graphics (Standard)

- Resident fonts: Courier (10) and Prestige Elite (12) (Portrait and Landscape).
- IBM & Epson Graphics printing at 300, 150, 100 and 75 dots per inch.
- 512K of memory (448K) for downloading of custom fonts/forms.

FREE
Ventura Publisher & Mouse with purchase
($1090 Value)

MANNESMANN *TALLY*

INVESTORS

Buy low, Sell high

MetaStock and The Technician
PC Magazine
"Editor's Choice"
April 15, 1986

PC MAGAZINE

Managing Technology
"Builds Business Success"

4411 GEARY BLVD.
San Francisco
CA 94118
(415) 386-2700

Authorized Epson Dealer. Epson is a trademark of Epson America. HP Laserjet is a trademark of Hewlett Packard.

FREELANCE PLUS

Converting Your Data To Effective Graphics

By Woody Liswood

Lotus' *Freelance Plus* is one of the easiest to use, most sophisticated and most complete display graphics—by which I include the type of graphics normally found in a business environment—programs available for microcomputers. *Freelance Plus* works with a variety of dot matrix printers and digital plotters. It comes with an extensive library of graphic images to help increase visual impact and interest.

Aside from the tremendous power of *Freelance Plus* in creating graphics, it also offers two major benefits when using files created by other programs. *Freelance Plus* directly imports *Lotus*.PIC files, *Graphwriter* picture files, and any ASCII file. It moves, deletes or changes any element on the screen. It also adds additional text or library images to help make the graphic more visually interesting.

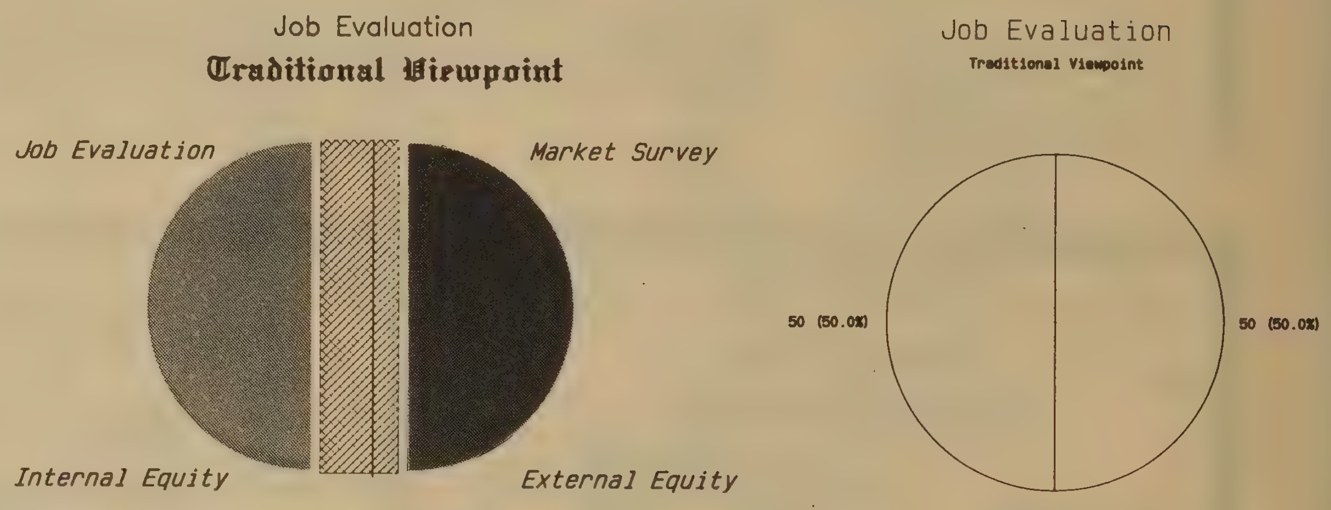
In addition to entering text, you can choose from lines, arrows, rectangles, circles, slices, arcs, markers and polygons. You can enter a variety of bar, line and pie charts from filling in forms in a special chart menu. The graphic elements you create can be constructed from a variety of colors, line widths, and fill patterns. There are multitudes of text fonts.

Each of these elements can be sized individually or as a whole. Any element can be moved to any part of the screen. Graphic elements can be identified individually, or created and merged into stand-alone graphics which *Freelance Plus* identifies as symbols. These symbols can then be placed into your own individual libraries to be used over and over again as necessary. You can also do freehand graphics if you have a mouse.

CHARTS

Creating charts is one of the most common problems for businesses. *Freelance Plus* has text, pie, bar, line and scatter charts built into the system.

One of the problems I had with *Freelance Plus* is that it lacks the ability to fit a line through the scatter charts. Of course, if you need to enter in that calculated line, you can create the chart in *Graphwriter*, also from *Lotus*, and then import the chart into *Freelance Plus*.



The same data, with graphs generated by 1-2-3 (left) and Freelance Plus.

There is a limit to the number of data points which can be entered into the chart section of *Freelance Plus*. Moving to *Graphwriter* gives you the calculated line as well as up to 100 points per line. If you have more than that, you must use *Lotus*, create your graphic, program your line fit, create your graphic, then move it into *Freelance Plus*. *Chart Master*, for example, allows more than 100 points on a line, but you cannot move that chart into *Freelance Plus* for additional manipulation.

You can enter data into these predefined chart formats through the keyboard or by importing *Lotus* Worksheet or *dBASE* files. I have used the *Lotus* interface and there were no problems.

There is a variety of information which you enter into the form displayed on the screen.

First, identify the type of chart. Next, enter up to two lines of headings. If you are creating a bar chart, you must tell how many bars per cluster you need—you are allowed up to eight. Then tell how many bars, or clusters of bars, are to be used. *Freelance Plus* allows up to 36 clusters. Each bar can have a legend. You can have separate colors and/or bar fills. Each bar cluster can also have a separate label. You can then identify a label for each axis. Each axis can be scaled separately; also specified is a minimum and maximum value for each axis, as well as the label interval and tic mark interval for each axis. If needed, a separate type face is available for each element.

The completed form is created as a separate symbol on the graphic screen. Once created, it can be moved and sized as desired. Charts may also be saved and retrieved.

If you import data from a *Lotus 1-2-3* or *Symphony* file, you fill in a specific input form. You identify the chart type, and then give the named ranges from the worksheet which contain the data for the chart format. When I went to import my first *Lotus* Worksheet, I had to exit *Freelance*, boot *1-2-3*, identify the named ranges, then return to *Freelance Plus* to import the file.

The *Chart* menu also allows you to create text charts. You must identify each block of text and all of the

Freelance Plus directly imports Lotus.PIC files, GraphWriter picture files, and any ASCII file. It moves, deletes or changes any element on the screen. It also adds additional text or library images to help make the graphic more visually interesting.

AT 3F WE SELL SYSTEM SOLUTIONS AT AFFORDABLE PRICES AND TECHNICAL ADVICE AT NO ADDITIONAL COST!

3FAT—10

10 MHz 20MB AT MONO SYSTEM

$1575

- 20MB Hard Disk Drive
- Mono Monitor
- Mono Graphic Card
- 8/10 MHz CP
- 1024KB Memory, (optional) 512K standard
- Hard Disk/ Floppy Controller
- Maxi Keyboard
- 192W Power Supply
- Clock Calendar w/Battery Backup

- Fully IBM Compatible with AMI BIOS
- 1.2MB FDD
- Option Math Co-processor 80287
- 1 Year Warranty
- Made in USA

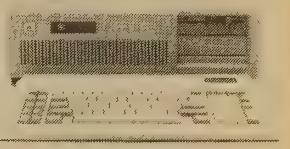
3FAT-8 MHz

AT COMPATIBLE

$755

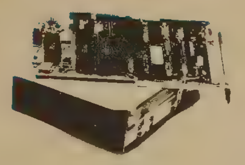
Basic System

With option 1.2MB Floppy Drive WD/HD/Floppy Controller **$1025**



- 6/8 MHz CPU
- Fully IBM Compatible with AMI BIOS
- 192W Power Supply
- 512K Standard Expandable to 1MB
- Maxi/Switch/ Pro™ Keyboard
- Operation Manual
- Clock Calendar w/Battery Backup
- AT Setup Utility S/W
- One Year Warranty
- Made in USA
- FCC Class B Approved

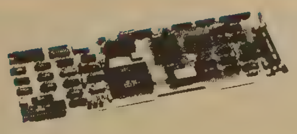
HARD DISK & TAPE BACKUP SUBSYSTEMS



20MB Tape Backup Int/Ext	$580/620
60MB Ext	650
60MB Int	757
50MB Floppy Tape B/U Int	575

	INT.	EXT.
20MB H/D Subsystem Seagate 4026	$659	759
30MB H/D Subsystem Seagate 4038	759	859
40MB H/D Subsystem Seagate (available now)	$859	959

HARD DISK CONTROLLER



Hard Disk Controller for XT Controls 2 HD Up to 160MB	$75
Hard Disk Controller for AT Controls 2 HD and 2 FD	160
Hard Disk Controller for XT Controls 2 HD and 2 FD	139

LAPTOP COMPUTERS

Zenith 181 • 4.77/8MHz
• 2 720KB Disk Drives

CALL

HARD & FLOPPY DISK

ST225 w/Controller Card and Cable for XT **(Monthly Special)**	$325
ST238 w/Controller Card & Cable	399
ST225 Half Ht. Drive only	285
ST238 Half Ht. Drive only	339
ST4026 20MB 39 ms Full Ht. Drive only	495
ST4038 30MB 39 ms Full Ht. Drive only	575
ST4096 80MB 39 ms Full Ht. Drive only	1035
ST4051 40MB 39 ms Full Ht.	**Special 685 or 635 Qty. 2 or more**
TEAC 360K/1.2MB	85/125

MONITORS

NEC MULTISYNC	549
Hi Res Mono Monitor w/Swivel Base	115
SAMSUNG Mono Monitor	70

PRINTERS

NEC PINWRITER P6	$439
CITIZEN MSP 10/15	$285/385
IBM Pro Printer	395
C. ITOH 310P 300 CPS LQ	499
TOSHIBA P321SL	589
EPSON 86e	349
EPSON 286e	469

XT COMPUTERS

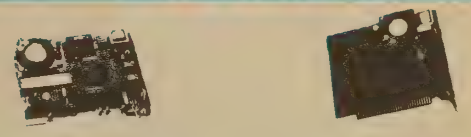
• 8088 CPU • 4.77/8MHz Software Switch Selectable • 640K Std. • 360KB Floppy Drive • 150W Power Supply • 4 Layer Motherboard • Floppy Disk Controller • Keyboard AT Style • FCC Class B Approved

3F XT

$599

Call for IBM Computers

MODEMS

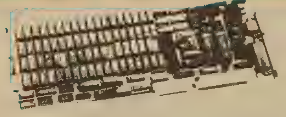


300/1200 Baud Int w/S/W Hayes Comp.	1200/2400 Baud Int/Ext Hayes Comp.
$109	**$199/389**

GRAPHIC CARDS

Monographic with Printer Port	$99
Micro Enhancer EGA/CGA/MDA Herc Compat	199
Vega Deluxe 640 x 480 Hi Resolution	375

MEMORY



3F-173 Mul Fun EMS Brd LOTUS/INTEL/MICROSOFT/Expanded Memory for PC/XT or AT Compatible 1 SR Port Standard, 2nd optional/GP	$179
3F-125 OK—2MB Memory 1 SP Standard, 2nd optional/GP	169
3F-3000 3 MB Mem Expn Brd for AT	145
3F-576 Mem Expn Short Card for PC/XT & Portable	45

MISCELLANEOUS

Expansion Chassis for PC/XT/AT	$425
Optical Mouse	99
Power Supply FCC Class B Approved 150/200	85/135
4 Way Printer Switch	59
Generic CADD	99
DOS 3.2/GW BASIC	93/93
Keyboard IBM Enhanced Type	85
Mini I/O for XT/AT	75
80286 Turbo Brd PC/XT	339

3F ASSOCIATES

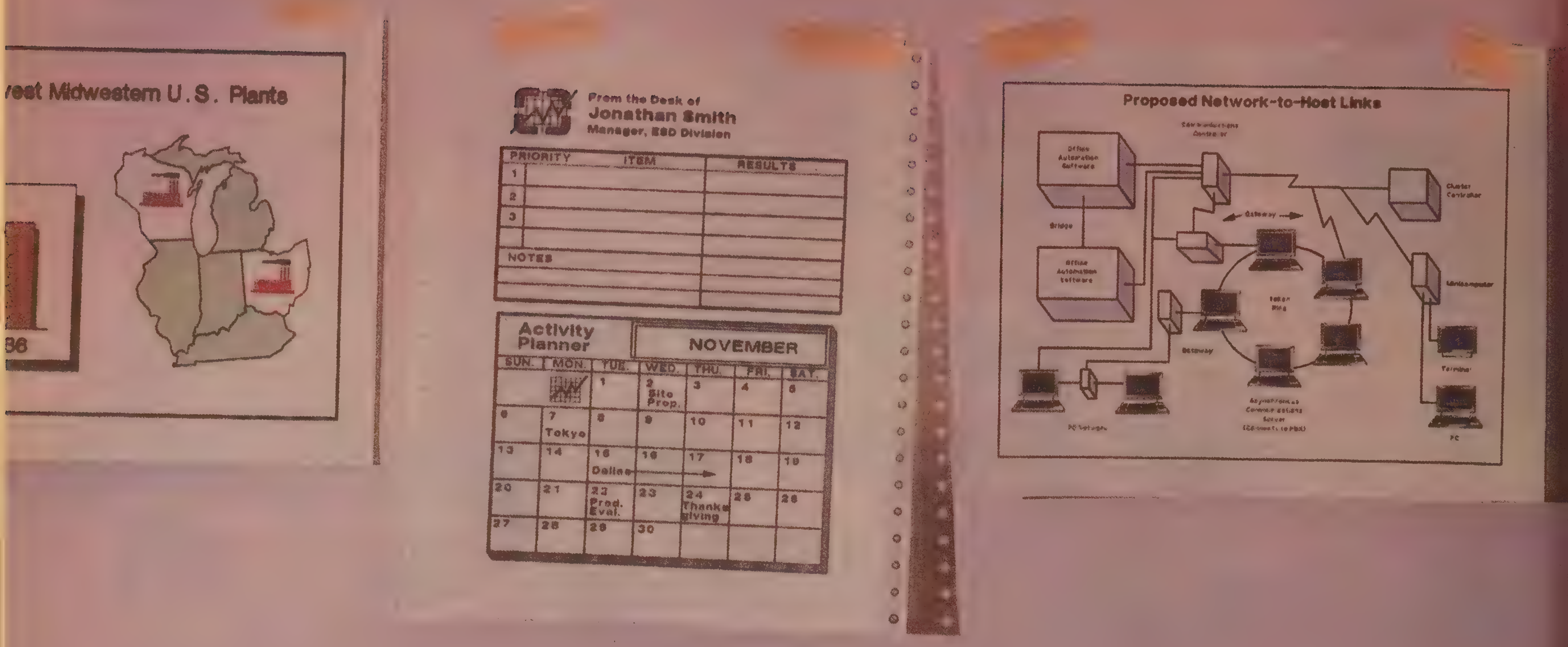
44100 Old Warm Springs Blvd.
Fremont, CA 94539

Visa, MC, Am Ex Accepted
Price Subject to Change W/O Notice

Dealers are Welcome

CORPORATE LEASING AVAILABLE

CALL (415) 659-0403



Lotus® always wanted to get into pictures. It was just a matter of getting the product exactly right.

That's why Freelance® Plus is big news. It's a powerful graphics package for business that adds real punch, real impact to all your work. Whether it's memos, reports, forms, bulletins, schedules or full-blown presentations.

Freelance Plus works with many popular PC software packages. Like 1-2-3® Symphony® Graphwriter® Freelance Maps and dBase® Plus you can use it with programs like Lotus Manuscript™ to merge text and graphics into a single document.

Freelance Plus gives you all the graphics tools you need. Maps. Diagrams. Symbols. Standard business charts. Logos. Editing. For paper. For slides. For overheads. *All in one program.*

And the best part is, the more you use it, the more you'll discover you can do with it.

Freelance Plus. Designed to become the standard for business graphics. Because it allows you to picture what you're trying to say.

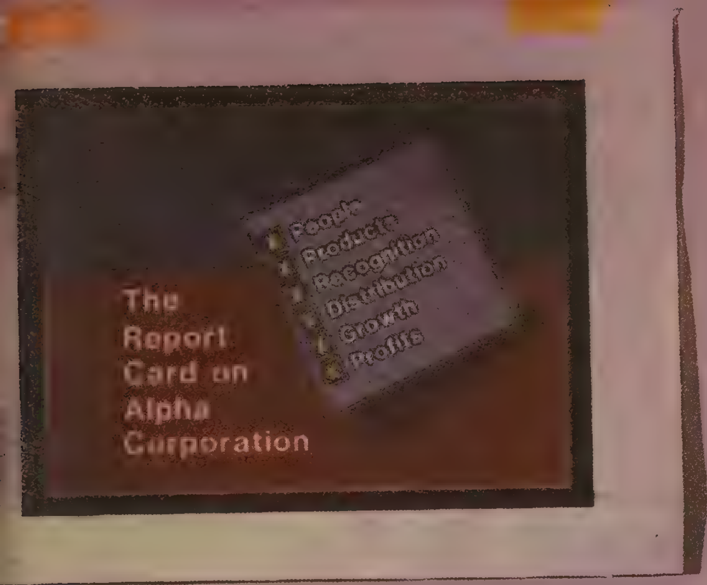
See your local authorized Lotus dealer for a complete Freelance Plus demonstration. To order a $10.00 demonstration package, call 1-800-345-1043 CP1658

Lotus Freelance Plus

The one graphics product for presentations, reports and everyday business communications.

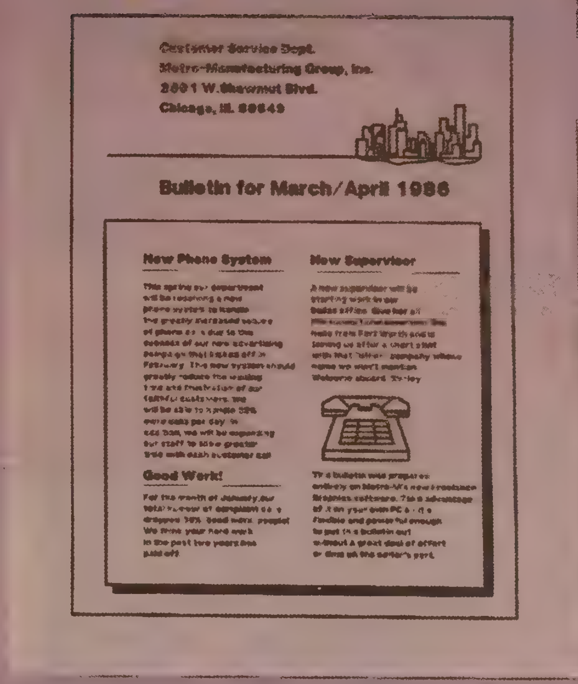
© 1986 Lotus Development Corporation. Lotus, 1-2-3, Symphony, Freelance and Graphwriter are registered trademarks of Lotus Development Corporation. Lotus Manuscript is a trademark of Lotus Development Corporation. dBase is a registered trademark of Ashton-Tate.

See Next Page For The **Softsel** Dealer Nearest You!



The Report Card on Alpha Corporation

- People
- Products
- Recognition
- Distribution
- Growth
- Profits



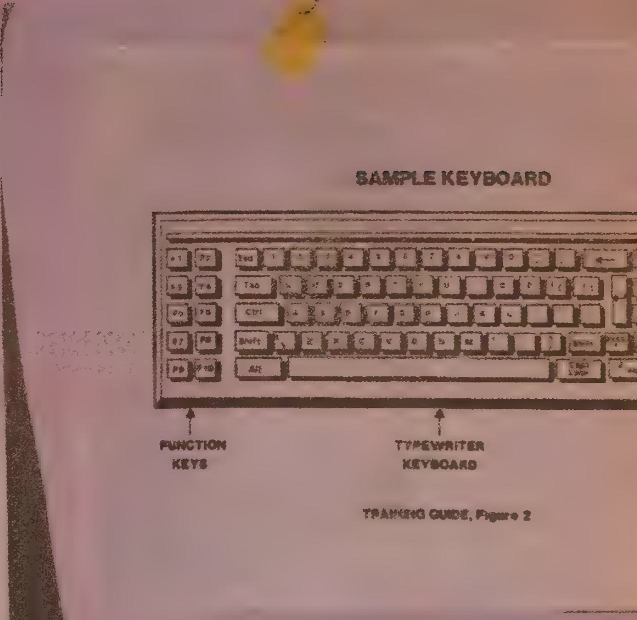
Customer Service Dept.
Metro-Manufacturing Group, Inc.
2001 W.Shawmut Blvd.
Chicago, Ill. 60649

Bulletin for March/April 1986

New Phone System

New Supervisor

Good Work!



One Program

charts, symbols
diagrams, etc., etc.

Softsel Dealers

John Gault Computer
3855 Oyster Point Blvd. #1
S. San Francisco, CA 94080
(415) 872-1500

Access-To-Software
4720 Geary Blvd.
San Francisco, CA 94118
(415) 751-2231

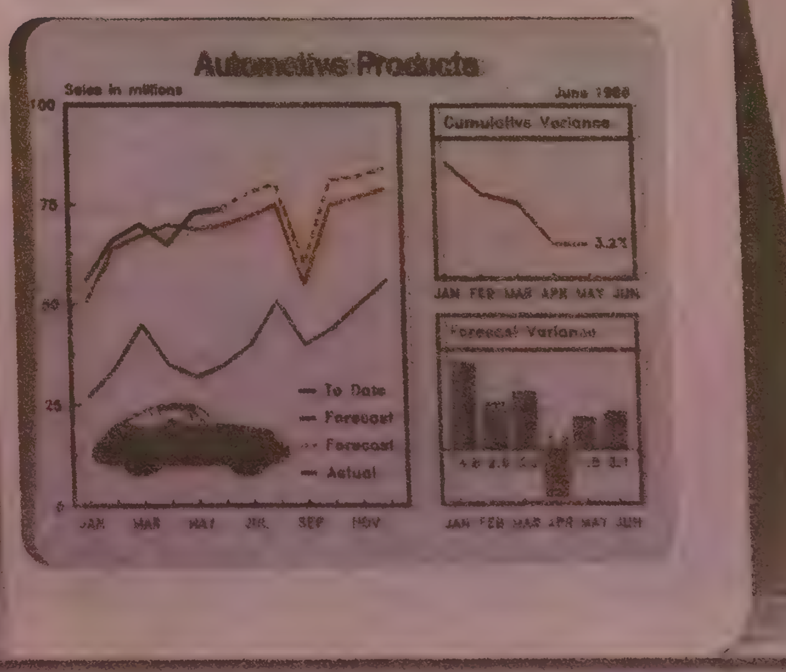
800 Software
940 Dwight Way, #14
Berkeley, CA 94710
(415) 644-3611

MicroTech International
5835 Doyle Street, #101
Emeryville, CA 94608
(415) 658-1433

Infomax/Oakland
1000 Broadway
Oakland, CA 94602
(415) 356-6575

Infomax/Mill Valley
761 East Blithedale
Mill Valley, CA 94941
(415) 356-6295

Overheads & slides, too.



Blackship Supports Fertility Rites on Desktop

OYSTER POINT. "Yoo-hoo, Mr. Blackship, we're back!" Turning, Blackship waved away the smoke of his Cuban cigar and recognized Mabel, her faithful Harold close behind.

"A pleasant surprise," bowed Blackship. "And how was your expedition through the jungles of Borneo?"

"Land sakes," she laughed. "Once we ditched the guide, it was a real trip. We'll leave for the Hebrides as soon as we can wade through the annual report and finish our yearly newsletter."

"Desktop publishing," nodded Blackship. "Well, you've got a good start with the Blackship system."

"And Harold is giving me the HP LaserJet Series II printer for my birthday. What a romantic!"

Blackship laughed. "With Ventura software for only $599, you're in business."

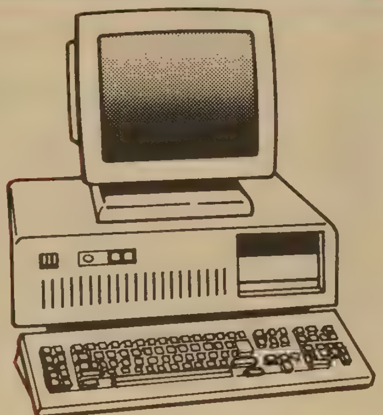
"Maybe," complained Harold. "But who can afford the scanner to handle all these photos?"

"No problem," smiled their friend. "When you buy hardware from Blackship, you get free use of our scanner."

"See, Harold," said Mabel. "I told you Blackship would take care of us and help improve our image."

"Maybe, Sweetums, but just wait 'til our friends get a load of us in that fertility rite."

AT* COMPATIBLE SYSTEMS



ANNOUNCING OUR COMPLETE 386 AT* COMPATIBLE SYSTEM $2,999.

The assembled AT* system includes a 16 MHz Intel 386 CPU, 1 MB RAM and 200-Watt power supply. A Western Digital floppy/hard disk controller is provided, along with a Hercules™ compatible monochrome/graphics printer card with parallel port. A Quimax DM-14 14"-Monitor, AT* style case, new enhanced AT* style keyboard, and a TEAC 1.2 MB floppy disk drive complete the system.

With 40MB Seagate Hard Drive	$3,699.
With 80MB Seagate Hard Drive	$4,049.

COMPLETE AT* COMPATIBLE SYSTEM
With fast 20 MB hard disk drive and display

(FCC Class B Approved) **$2099.**

The assembled AT* Compatible system includes your choice of either a 6/8 MHz or 6/10 MHz Intel 286 CPU, 1 MB RAM, 220-watt power supply. A Western Digital floppy/hard disk controller is provided, along with a 1.2 MB floppy drive and a 20 MB Seagate ST4026 hard disk. A Hercules™ compatible monochrome/graphics printer card with parallel port and a Quimax DM-14 14" Monitor are included. The system comes with an AT* look-alike chassis and a new enhanced AT* style keyboard. This system is 33% faster than IBM's. 1-year warranty on parts and labor. **Free word-processing software while supply lasts.**

30MB Hard Drive Upgrade **$99.00**

COMPLETE AT* COMPATIBLE EGA SYSTEM *with 30MB drive* $2999.

As above but with a Mylex EGA with software and NEC Multisync 14" Monitor.

OTHER EGA SYSTEMS FROM $2600.

XT* COMPATIBLE SYSTEM

COMPLETE XT* TURBO SYSTEM $799.

The assembled XT TURBO system includes an 8088-2 CPU, 4.77-8 MHz, with 640K RAM - 150ns, 2-360K Fujitsu floppy disk drives, and a Hercules™ compatible monochrome graphics printer card. Multifunction card with real-time clock, 1 serial, 2 parallel, 1 game port, 150-watt power supply and a Casper GM-1230 amber monitor. 90-day warranty on parts and labor.

XT UPGRADES

Seagate ST-225 Hard Drive with Controller	$390.00
Quimax DM-14 14" Monitor Upgrade	75.00

DESKTOP PUBLISHING

Corporate newsletters or personal messages to the masses, this is the hottest desktop publishing program available.

VENTURA DESKTOP PUBLISHING SERIES $599

Now you can publish like a pro at an unbeatable cost. Ventura Publisher Edition from XEROX. . . only $599!

- No typographic layout skills needed.
- Pre-designed layouts make it easy.
- PC/XT/AT Compatible.
- Makes cut-and-paste a thing of the past.

HP LASERJET SERIES II PRINTER $1995.

- Easy to use
- Font flexibility
- Improved paper management
- LaserJet Plus compatibility
- Modular components
- 512K standard with up to 4.5 MB

MICROTEK IMAGE SCANNER $2099.

The Microtek MS-300A is a high-resolution desktop image digitizer that is unsurpassed in its class for speed, flexibility and reliability. Sophisticated firmware in the MS-300A allows processing in both line art mode (for text, diagrams, etc.) and halftone mode (for photographs, multi-shaded artwork, etc.) This compact, portable scanner utilizes state-of-the-art image processing technology.

PAGEr $49.95

Desktop publishing for the rest of us! Enables you to do your own page layouts:

- Without a graphics card
- Without a fully loaded PC
- Without a laser printer
- Without spending a bundle!

ACCESSORIES

SOFTWARE CAROUSEL™ $59.95

Software Carousel lets PC's keep up to ten different programs loaded and ready to run. And switch instantly from one to another without the hassle of saving, loading, exiting and retrieving. Best of all, it makes full use of all available memory for each and every program. And it works with products like AST's RAMpage™, Intel's Above Board™, and other products supporting the L/I/M Extended Memory Standard, too.

All prices are limited to stock on hand.

**IBM, XT and AT are registered trademarks of IBM Corp*

HAYES is a registered trademark of Hayes Microcomputer Products, Inc

BLACKSHIP
COMPUTER SUPPLY

IN CALIFORNIA CALL: **1-800-654-7955**
FROM S.F. BAY AREA: **415-952-1994**
NATIONAL: **1-800-431-6249**
385 OYSTER POINT BLVD. #10
SOUTH SAN FRANCISCO, CA 94080
MON.-FRI. 9-5 SAT. 10-4
DON'T SEE IT? CALL US.

BULK BLANK DISKS

5.25" DISKETTES — BULK

House DSDD Standard Grade (55% Clipping)	.49
House DSDD Premium Grade (65% Clipping)	.59
Verbatim SSDD Hi Clip (65% Clipping)	.55
Verbatim DSDD Hi Clip (70% Clipping)	.69
PC DOS Preformatted (DOS 2.1 and above)	.89
High Capacity 1.2 MB (New low price)	1.29

All above include LABELS, WRITE PROTECT TABS, TYVEC SLEEVES and HUB RINGS (except for 1.2 MB which do not require hub rings)

3.5" MICRO DISKETTES — BULK

DSDD (800 K) **1.35**

BOX BRANDED DISKETTES	1-10 Boxes	11-25 Boxes
Polaroid DSDD (List—26.95)	14.50	12.50
Sentinel DSDD—Black (List—17.50)	11.50	9.95

COLORED DISKETTES	1-5 Boxes	10+ Boxes
Two each of five popular colors (10 pak): red, blue, orange, yellow and green	6.50	5.90

Lifetime replacement guarantee on all diskettes

AT* COMPATIBLE COMPONENTS

AT* EGA w/Hercules Emulation	259.00
MYLEX EGA w/software	350.00
AT* Parallel/Serial (1p/1s)	60.00
AT* Multi I/O (1p/2s (1 inst)/1g)	70.00
AT* Monographics with parallel port, Hercules Compatible	83.00
AT* Multi I/O (1p/2s (2 inst)/1g)	85.00
MSDOS 3.2 w/GWBasic	70.00
NEC 256K/120 ns	3.89
TEAC or PANASONIC 1.2 MB floppy disk drive	145.00
TEAC DSDD 360K for AT*	98.00
QUIMAX DM-14 14" Monitor (Amber)	149.00
QUIMAX PX-22 Color Monitor	589.00
TATUNG Color Monitor	535.00
NEC MULTISYNC (Limited to stock on hand)	689.00
LOGITECH Mouse	99.00

MODEMS

MODEL "A" SERIES™ AMAZING THINGS™ 1200B AND 2400B MODEMS

- Hayes® compatible.
- Install in minutes in the full or half-size slot of any IBM®-compatible personal computer.
- Come with a 24-month warranty.
- Have auto-answer and auto-dial features, communicate at 300/1200/2400 b.p.s. and operate on rotary or touch-tone phone lines.
- Can connect your PC to just about any other PC — in the world.

Sale Price (Last 2 weeks)	**$249.00** and **$129.00**
Will be	**$289.00** and **$149.00**

MITAC WISEMODEM™

1200B, Hayes® compatible	$109.00
With purchase of system	89.00

information which goes with it. It is similar in nature to the text chart area of *GraphWriter.* I felt that I would rather use the main graphics screen of *Freelance Plus* with its infinite flexibility than work under the constraints of the predetermined text charts.

MAIN SCREEN

The main screen of *Freelance Plus* is bounded by a view area. This view area shows the edges for the size of paper you identify for output. At the top of the view area is a *Lotus* style menu. As you move your bar cursor from menu item to menu item, a descriptive line appears showing the commands available as a subset of the top item.

On the right of the screen is an information panel which gives information about the currently selected item and cursor position. It always shows the position of the cursor on the screen in terms of X-Y coordinates. It tells the name of the current file as well as the selected input device.

Since there are two separate graphic work areas in *Freelance Plus,* the active work area is identified. The amount of available graphic memory is shown as well. Additionally as the cursor selects an element on the screen, the information box shows the type of item selected, its color, line style, line width, fill pattern, and edge color.

Freelance Plus works with EGA, CGA and Hercules Graphic adapters. With an EGA card *Freelance Plus* displays graphics in the chosen color.

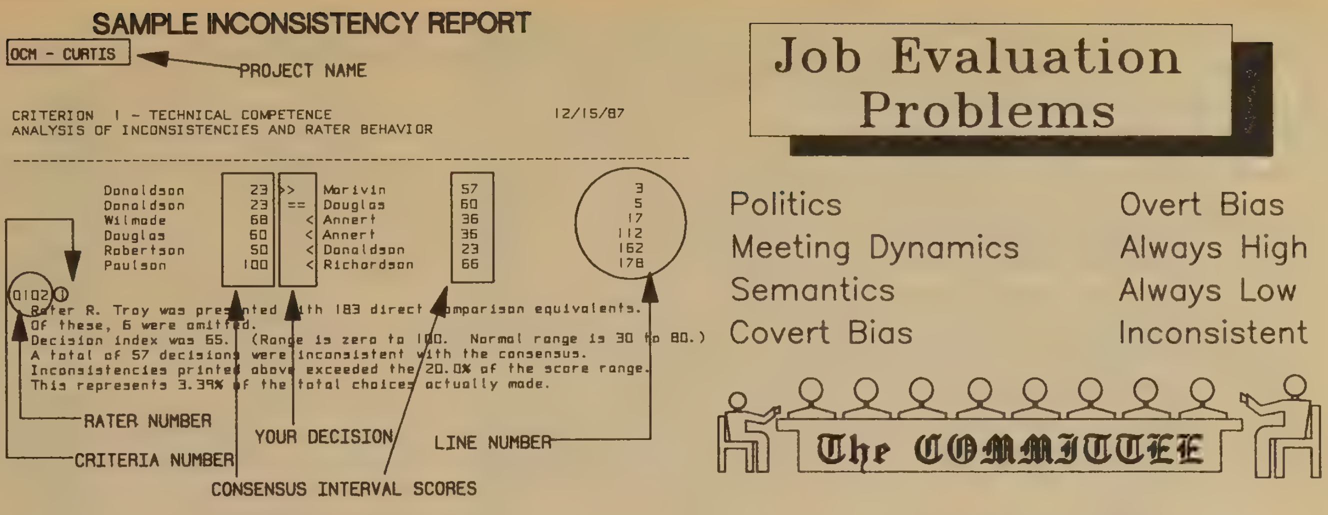
TEXT

One of the most important features of *Freelance Plus* is the ability to import pure ASCII files directly as graphics. This means you can create charts with your word processor, read them directly into *Freelance Plus* and then turn them into overhead slides.

A few months ago I did a speech entitled "Productivity Software—Life Beyond *Lotus*" in which I talked about 30 or so software packages which I felt were important to own and use in business. *Freelance Plus* and *Sidekick* received premier attention.

To illustrate the speech, I had created over 200 overhead slides which were screen images from the various software packages. To make the slides I booted the package and called up or created the screen that I wanted to have as an illustration. Next I invoked *Sidekick* and entered the notepad. Then I imported the screen image into the notepad and saved it. I then booted *Freelance Plus,* imported the *Sidekick* file, sized it to fit the overhead projector transparency and plotted the graphic using a Zeta Sprint plotter in HPGL mode on overhead transparency material. I had told *Freelance Plus* that I had an HP 7475 plotter connected.

Without *Freelance Plus,* that speech would have been almost impossible to illustrate. Thank you *Sidekick* and *Freelance!*



SAMPLE INCONSISTENCY REPORT

```
OCM - CURTIS

CRITERION  1 - TECHNICAL COMPETENCE                    12/15/87
ANALYSIS OF INCONSISTENCIES AND RATER BEHAVIOR
----------------------------------------------------------------------
              Donaldson     23 >>  Morivin      57            3
              Donaldson     23 ==  Douglas      60            5
              Wilmode       68  <  Annert       36           17
              Douglas       60  <  Annert       36          112
              Robertson     50  <  Donaldson    23          162
              Paulson      100  <  Richardson   66          178
0102 1
  Rater R. Troy was presented with 183 direct comparison equivalents.
  Of these, 6 were omitted.
  Decision index was 65.  (Range is zero to 100.  Normal range is 30 to 80.)
  A total of 57 decisions were inconsistent with the consensus.
  Inconsistencies printed above exceeded the 20.0% of the score range.
  This represents 3.39% of the total choices actually made.
```

Typical graphics generated for a variety of purposes by Freelance Plus.

ADD

When you wish to add anything on the screen, it is done through the ADD menu. Select from TEXT, LINES, ARROWS, RECTANGLES, POLYGONS, CIRCLES, SLICES, ARCS, MARKERS or FREEHAND lines. To select one of these elements, you position the cursor to the point on the screen where you wish the graphic to begin and then press the space bar. As the cursor moves, the graphic remains anchored to the point where the cursor was located when you first pressed the space bar. It then stretches or creates in the direction you are moving the cursor. For elements with more than one point, you continue to press the space bar to provide an anchor and move on. When done, you press return.

SELECT

If there is more than a single element on the screen, you must tell *Freelance Plus* which element you wish to edit. You do this through the SELECT menu. You can select ONE element, SEVERAL elements, all of the elements inside a DEFINED AREA, elements which are TOUCHING, MORE or LESS than are currently selected, ALL elements on the screen, NO elements on the screen, elements which are LIKE the element which you have currently selected or CYCLE through previously selected elements to determine which one you wish to work with.

For example, you may have created a form with many lines and text elements. You decide that you wish to change all of the lines on the form to a bolder width and a different color. You first use select ONE and select any of the lines. Then you use select LIKE to select all lines. Now you can edit all of the lines as a single element to make those changes globally.

You can do the same thing for text elements. Let's say you want to leave all of the graphic elements in an illustration alone, but desire to change all of the text elements to the same type face. You would first select a single text element. Then select like text elements. Then you make a single editing change for those text elements to a single text face. *Freelance Plus* identifies each selected element by putting a small box on the screen at the elements attach point.

EDIT

The EDIT menu gives you complete control over all the elements on the screen. You can SIZE any or all objects uniformly or stretch them in any single direction. You can change the COLOR, STYLE, FILL, and WIDTH of any line elements.

You can also change text FACES, SIZES, ANGLES, or ANCHOR POINTS. With lines you can move either end or any point in the line to any other place. You can connect lines, and polygons. You can also change the EDGE color of elements to one color and have the inside fill as a different color.

MOVE/REARRANGE

Within the MOVE and REARRANGE menu you can COPY, REPLICATE, DELETE, UNDELETE, and FLIP (HORIZONTALLY or VERTICALLY). You can also change the PRIORITY of any item or selected item. This priority is important with dot-type output devices.

As you create items, the last item created is the last item which is printed on the output device. With a Digital Plotter, this means the last line placed on the screen is the last line which is drawn on the plotter. If this line is over another graphic element it will be plotted over the element. With different pen colors for each element, this can create interesting visual displays. However, with black and white dot devices, elements which overlay other elements may be visually confusing.

With the dot devices, the lower priority items are not printed on the device. Only the highest priority or the graphic on top is printed. This is similar to a hidden line routine in CAD programs. By changing the priority of the item you can hide or bring it to the forefront.

This menu also lets you JOIN or SPLIT apart library images or single graphic elements so that you can work on a single element. You can also LOCK or UNLOCK elements so that they can be edited.

Freelance Plus has the ability to import pure ASCII files directly as graphics. You can create charts with your word processor, read them directly into Freelance Plus, and turn them into overhead slides.

VIEW

The view menu lets you zoom IN on a section of the screen or moves the view around on screens which extend larger than the display area. By moving in on an element you are able to see finer and finer detail.

This section contains one of two "bugs" I found in the program. At least I think it's a bug—the documentation, however, calls it a feature. You decide.

When zooming in on a section of the screen, you will normally be working on graphic elements which extend beyond the new screen boundaries. If you are editing and changing these elements, you may find when you return to your normal view that the change you thought had made in the close-up view has not been made on the full graphic. There may have even been major position changes made that you did not want.

This is especially true if you attempt to move a line which is shown on the detail screen and which extends beyond the screen. You may move a point on the line which is visible on the screen, but you cannot move the entire line without complete disaster.

One of the bay area's largest hardware and software selections in stock

Thousands of software and hardware products for MSDOS, Apple, and Mac Products for the Office and the Home

Lotus and Word Perfect classes
We take trade-ins
Trade in your old IBM or Apple for a high performance AT&T computer

AT&T

AT&T 6300 20 Meg System
640K, keyboard, graphics, green monitor, parallel, serial, clock. 1 year warranty
Only $1489

AT&T 6300 Plus 20 Meg System
512K, keyboard, graphics, green monitor, parallel, serial, clock. 1 year warranty
Only $1716

AT&T 6310 (80286) 20 Meg System
512K, keyboard, graphics, green monitor, parallel, serial, clock. 1 year warranty
Only $2641

AT&T Starlan Network Card
Easy to use!
Only $469

*DOS not included on above systems

MSDOS	
Dbase III Plus	399^{00}
Framework	419^{00}
Wordstar 2000 Plus	295^{00}
Microsoft Word	299^{00}
Word Perfect	249^{95}
Paradox	449^{00}
Rbase System 5	395^{00}
Crosstalk	139^{95}
Clipper	429^{95}
First Choice	119^{00}
Halo DPE	195^{00}
Fast Back	129^{95}
Words & Figures	169^{95}
Microsoft Windows	69^{95}
Generic Cad	79^{95}
Quickbasic	69^{95}
Turbo Prolog	69^{95}
Norton Utilities	69^{95}
Mace Utilities	79^{95}
Newsroom Pro	99^{95}
Org Plus	69^{95}
Traveling Sidekick	49^{95}
Dbase Programmers Utilities	74^{95}
Volkswriter Deluxe w/spell	89^{95}
Sideways	49^{95}
Fontasy	59^{95}
Disk Optimizer	45^{00}
Xtree	39^{95}
Dan Bricklins Demo Program	69^{95}
VP Planner	79^{95}
Financial Cookbook	39^{95}
Cut & Paste	14^{95}
Flight Simulator	33^{95}
Jet	39^{00}
Ventura Publisher	589^{00}

HARDWARE	
AT&T PC6300 Plus cpu only	995^{00}
AT&T Enhanced Memory board 512k	495^{00}
Seagate 20meg with controller	406^{00}
Plus Development Hardcard 20	699^{00}
Hercules Graphics Card Plus	219^{00}
Nec P7 24pin printer	699^{00}
Nec P6 24pin printer	510^{00}
Nec Multisync EGA	429^{95}
Nec Multisync Monitor	599^{00}
Practical Modem 1200	169^{95}
Mouse Systems mouse w/paint	149^{95}
Microsoft Mouse w/paint	149^{95}
Amdek 1280 Monitor	795

Friendly Software Store

376 El Camino Real,
San Carlos, CA 94070
415-593-8275

In some cases, when you attempt to move the line it will even disappear from the screen and will be completely out of place in the full view screen. The documentation slides over this by saying there may be problems if you attempt to do this type of edit. However, if you are using *Freelance Plus* to create forms which extend across an entire page, you will have problems in editing after using the VIEW command.

FILE

The file section allows you to retrieve and save files. It also allows you to import .PIC, ASCII, and METAFILES. The metafile is in a format which is based on "the currently proposed ANSI Computer Graphics Metafile (CGM)." Since I had no other programs which created or used these metafiles, I did not test this feature.

SETUP

When you first boot *Freelance Plus,* you can select and configure your output devices as well as identify your pen colors and sizes and the fonts you want to have available.

When you are in the OPTIONS portion of the PLOT menu, you can change the font selection to any font which was selected in SETUP. You can have up to three selected output devices active at a single time. I normally use a HP7475 for my digital plotter, an Epson MX80 for the dot matrix device, and an EGA screen. This way I can print a graphic to the screen to see if it will look like before it goes to the printer or the plotter.

The FONT section contains another "bug" in the program. There are occasionally problems when you mix text and graphics. The screen may not show exactly what will appear on the paper. This is because the text elements, as shown on the creation screen, may be slightly different from the text fonts which the output device produces.

This is especially true in creating multi-line forms using a non-proportional type face. In the older version of *Freelance,* you could change the screen type face to emulate the plotter type face so that this problem would not exist. In *Freelance Plus,* you can't.

In my opinion, *Lotus* has introduced a bug which did not exist in the earlier version. The documentation suggests that you PRINT the graphic to the screen before you plot in on the plotter so that you can see if there are going to be any problems. Then, to fix the problems, you edit the graphic so that the final output is correct even if the on-screen display is now incorrect. This, however, is a pain.

You can select the type of paper or transparency material you are using, and *Freelance Plus* will adjust the speed of the pen to give best results for the combination. You can also set the size of paper which you are using, as well as the orientation for the plot. As you do so, the graphic outline on the working screen will change to the size and proportions of the paper you have chosen.

You are allowed to have eight active text fonts. Depending on the output device, you can choose from a variety of hardware and software fonts.

SYMBOL LIBRARIES

One criticism of the earlier version of *Freelance* was that it did not contain many pre-drawn graphic elements. *Freelance Plus* comes with a few hundred elements, which may help to satisfy that criticism. There are library elements for arrows, borders, charts, chart aids, common objects, computer equipment, photography equipment, various boxes, and diagrams, flow charts, geometrics, markers, banners, boxes, titles currency, Greek alphabets, currency, flags, statehouses, human forms, international pictograms, map legends, mathematics symbols, music and card symbols, seasonal symbols, recreational symbols, signs, space planning for both 1/4" and 1/8" planning, clouds, and a map of the states.

Each library template can hold up to 20 separate symbols. There is also a library template for you to use in creating your own libraries.

The libraries are easy to use. You retrieve the library you wish onto the *Freelance Plus* screen you are not using. Then you select a symbol. Next you copy the symbol, return to the first screen, move the cursor to where you wish the symbol to be and press return. You can then move, size, and edit the symbol as necessary.

PROBLEMS

The two bugs mentioned above are a nuisance, but once you understand them you can easily work around them. The only other negative is limited graphic work area. *Freelance Plus* allows about 40K or so of work area. If you are using large size paper and creating complicated graphics you may find that there is just not enough space. I have run out of space on a number of occasions. It would seem to me that the graphic work space should expand to contain the total number of elements necessary and not be limited to such a small area.

CONCLUSIONS

Over the past two years I have probably created over 500 slides using *Freelance* and *Freelance Plus.* Although it seems complicated, I have never had to use the help screen or refer to the documentation to do what I wished (other than the original setup of the printers and plotters). If I had to have only one program for graphic output, *Freelance Plus* would be my choice. I feel than any person who must produce display graphics should own and use *Freelance Plus.* I could not give it any stronger recommendation. ☐

Copyright ©1987 by Woody Liswood. All rights reserved.

386 COMPUTER SYSTEM $2895.00
32 BIT,16 Mhz,8MHz 80286 HARD/SOFTWARE COMPATIBLE,1MB RAM EXPANDABLE TO 2 AND 10MB 1.2MB FDD, MADE IN THE US,ONE YEAR WARRANTY
CALL FOR SYSTEM PRICING

"Winner of the 2nd Highest Infoworld Review"

SPERRY MICRO IT 286 $2595.00
1.2MB FDD,512K RAM,30MB DISK,KEYBOARD,MONITOR GRAPHICS CARD,2 PAR/1 SER PORTS,DOS 3.1/BASIC ONE YEAR WARRANTY

WYSE The World Renowned Computer Terminal Maker Has Introduced a World Renowned Line of Computers

WYSE 286 $1795.00
1.2 MB FDD,640K RAM,6/10MHz,CK/CL,1 SER/2 PAR, AT OR EXPANDED KEYBOARD,WYSE 14-MONITOR GRAPHICS CARD,DOS 3.1/BASIC,YEAR WARRANTY

30MB SYSTEM $2295.00
40MB SYSTEM $2495.00

WYSE PC+ $1895.00
RUNNING AT 9.54 MHz,640K RAM,20MB DISK,AT OR EXPANDED KEYBOARD,WYSE 14-MONITOR,2 SER/PAR PORTS,BUILT-IN MONOCHROME-HERCULES-CGA-EGA PLANTORNICS CARD,DOS 3.1,ONE YEAR WARRANTY

HARDWARE

TAXAN 760 EGA & PARADISE AUTOSWITCH.....$750.00
($500.00 WITH ANY SYSTEM)
NEC MULTISYNC & QUAD MULTISYNC CARD...$900.00
($750.00 WITH ANY SYSTEM)
SEIKOSHA SL-80 24 PIN PRINTER......................$400.00
Automatic Paper Loading,Two Year Warranty,Epson & IBM Compatibility
($325.00 WITH ANY SYSTEM)
LaserPro EXPRESS LASER PRINTER...............$1795.00
HP PLUS 11 ....$1795.00

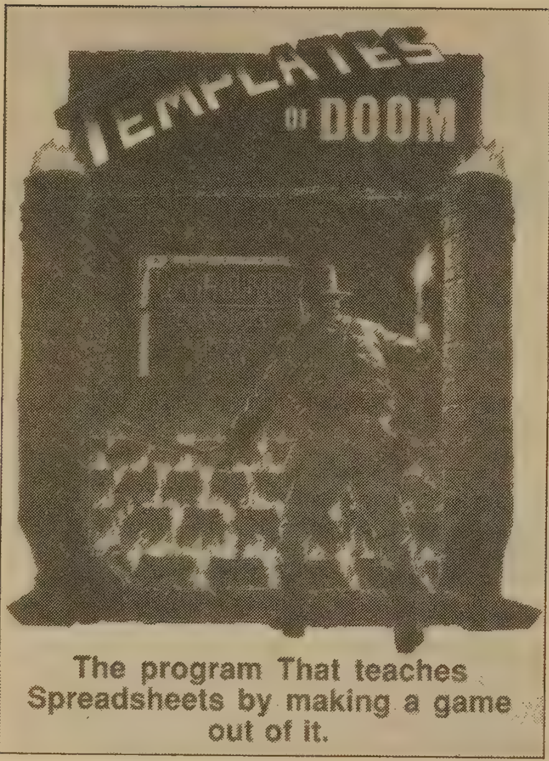
FREE DELIVERY, SETUP AND 1 HOUR TRAINING/CONSULTING
UNLIMITED PHONE SUPPORT

ADVANCED **Micro**
"THE INTELLIGENT SOLUTION"
1207 Bridgeway, Sausalito
(415) 332-4360

Hours: 10am-6pm, Tues-Fri
10am-4pm, Saturday

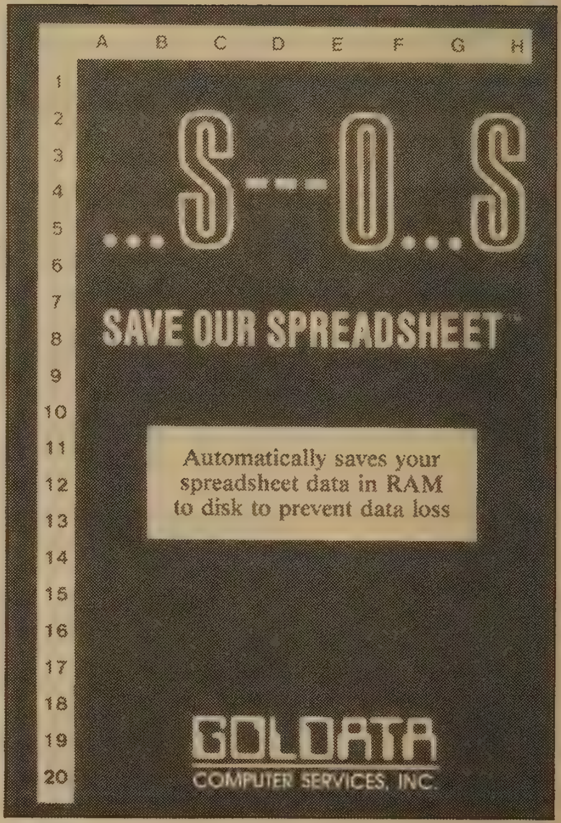
Authorized SPERRY Dealer

LOTUS ENHANCEMENT PRODUCTS


TEMPLATES OF DOOM
The program That teaches Spreadsheets by making a game out of it.

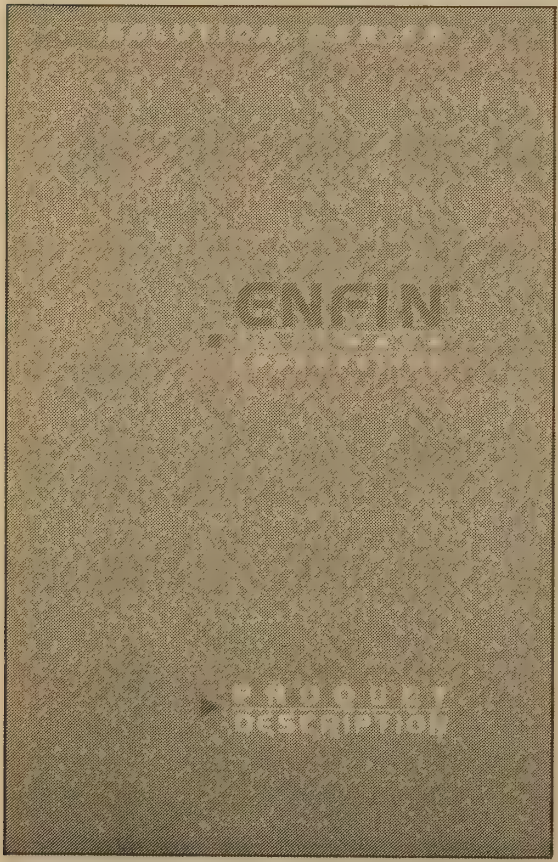
Learn Spreadsheets With Templates Of Doom

Templates of Doom, from Solar Systems Software, takes a witty, tongue-in-cheek approach to learning spreadsheets. The program is comprised of 24 puzzle-like adventures that require the use of different spreadsheet commands or formulas. Each puzzle is progressively more difficult and may be separated from the story to be used as a classroom exercise. Written by Pete Antoniak, Solar Systems Software, 8105 Shelter Creek, San Bruno, CA 94066. (415) 952-2375.



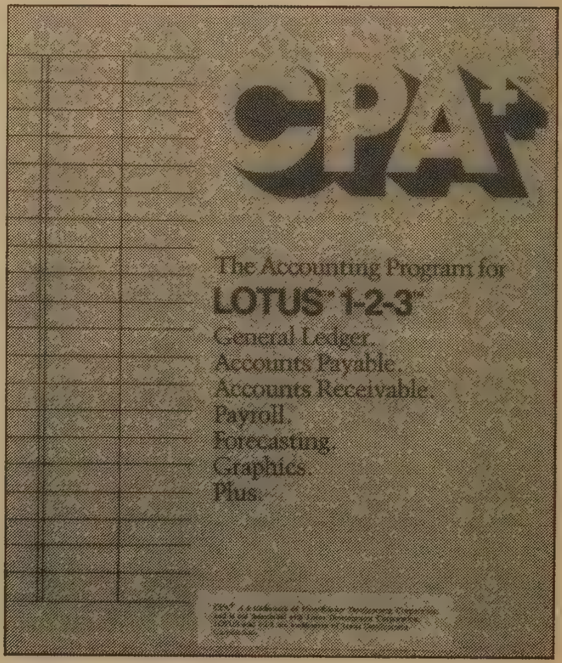
GOLDATA Saves Our Spreadsheet!

GOLDATA's *S---O...S, Save Our Spreadsheet*, is a memory resident utility program which automatically saves data currently in RAM memory to disk at intervals you specify. S---O...S protects the pressed-for-time spreadsheet user from data loss due to power faliure, premature exit without saving, and other calamities. GOLDATA Computer Services, Inc., 2 Bryn Mawr Avenue, Bryn Mawr, PA 19010. (800) 432-3267.



Optimal Values In Lotus

Optimal Solutions is the second module of ENFIN's Decision Support Solution Series. It adds to Lotus the ability to find optimal values for defined variables in *Lotus 1-2-3* and *Symphony* worksheets. The program has applications in areas from finance to transportation. The user can easily define the problem and view the results from window without exiting *Lotus 1-2-3* or *Symphony.* ($249.95) ENFIN Software Corporation, 6920 Miramar Road, Suite 106-A San Diego CA 92121. (800) 722-4272.



FrontRunner Upgrades CPA +

FrontRunner has released *CPA +* 3.0, an upgraded version of its *Lotus*-driven accounting package. The program has been re-written to take advantage of the 2.01 release of *Lotus 1-2-3*. New features include increased reporting capabilities, improved graphing functions, enhanced memory management, multiple company support and a revised, easier-to-use manual. ($295.) Front-Runner Development Corporation, 14656 Oxnard Street, Van Nuys CA 91411. (818) 376-1322.

Run Your Business With Ready To Run

Ready To Run Accounting from Manusoft Corporation is an automated accounting package that runs on either *Lotus 1-2-3* or *Symphony*. The modular system is designed to grow with your

You've Tried The Rest, Now Try THE BEST!!

NOW
Serving The
BAY AREA!

After serving the southland, CCA is pleased to announce the Grand Opening of its newest location in the Bay Area.

GRAND OPENING SPECIAL SALE!!

Special
Sale Prices On:

- Seagate
- Miniscribe
- Fuji Hard Drives
- Fujitsu Floppies
- Samsung Monitors
- Mitsubishi Monitors
- Nissho Printers and much, much more!

Here's Why We're The Best

1. RELIABILITY — CCA's fast, reliable service is legend within the industry. Turnaround on most products within 48 hours. Helpful, courteous, and knowledgeable salespeople who go out of their way to serve you.

2. QUALITY PRODUCTS — All CCA products are of the highest quality, backed not only by manufacturers you can trust, like Fuji, Seagate, Fujitsu, Samsung, Mitsubishi, and others, but by our own rigid quality control and customer guarantees.

3. ON-TIME DELIVERY — You want it when? NO PROBLEM! We carry a complete inventory of all brands we sell, and we ship the same day you order.

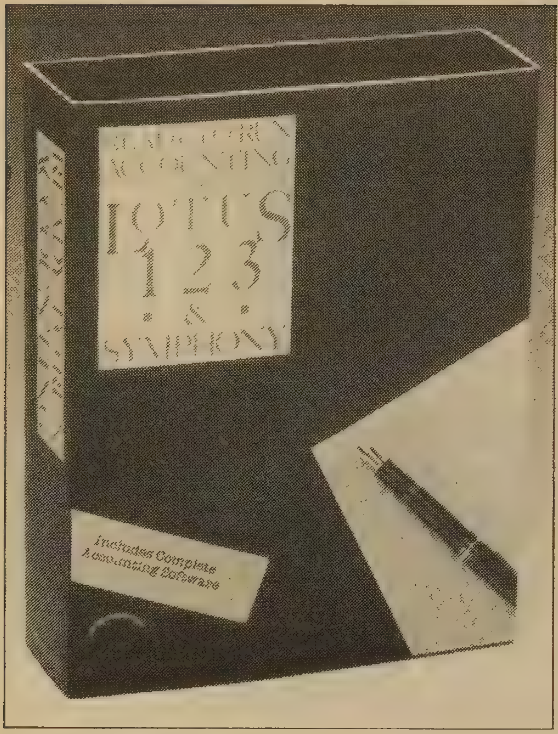
CCA
COMPUTER CONSULTING ASSOCIATES

2976 Scott Blvd., Santa Clara, CA 95054

(408) 970-9791

Dealers: Call for quantity pricing and terms.
End users: Call for the name of the dealer nearest you.

LOTUS ENHANCEMENT PRODUCTS

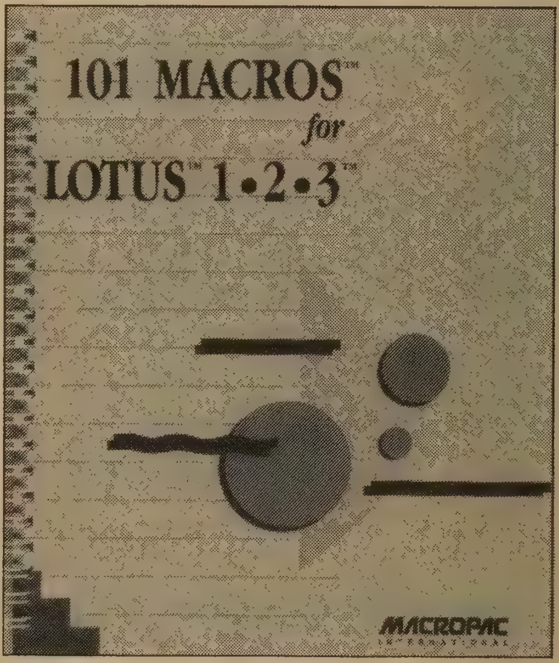


business. While General Ledger is the only module a small business may need, larger businesses can add, Accounts Payable, Accounts Receivable, Inventory/Billing and Payroll. Modules cost $49.95 to $69.95. Manusoft Corporation, 8570 W. Washington Blvd., Culver City, CA 90232. (213) 559-1561.

Rescue Those Damaged Lotus 1-2-3 Files

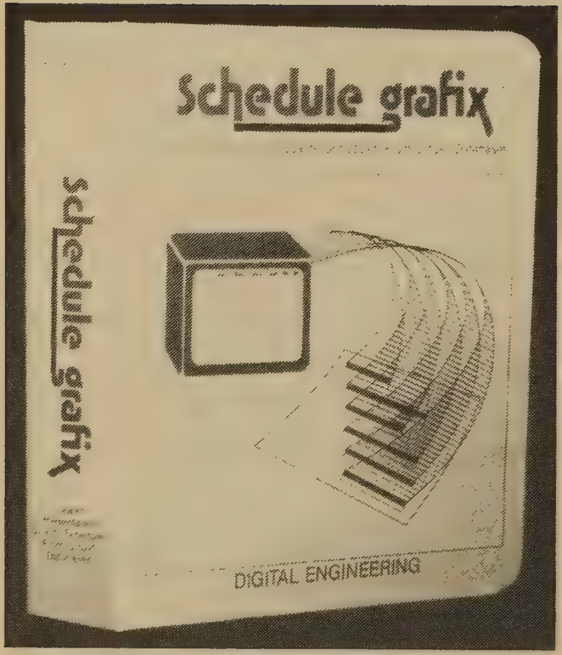
Spectrum Computer Services' *RESCUE*, is a way to save an average of 95% of the data off of a damaged *1-2-3* or *Symphony* file. With its advanced pattern matching abilities, it seeks out all usable information from a damaged file to form a new healthy worksheet. With *RESCUE* you simply enter the damaged file name and a recover file name. No searching, editing or any other manual steps are involved. ($49.95) Spectrum Computer Consulting, 9 Burditt Road, North Reading, MA 01864. (617) 664-0337.

Macropac Packs In 101 Macros



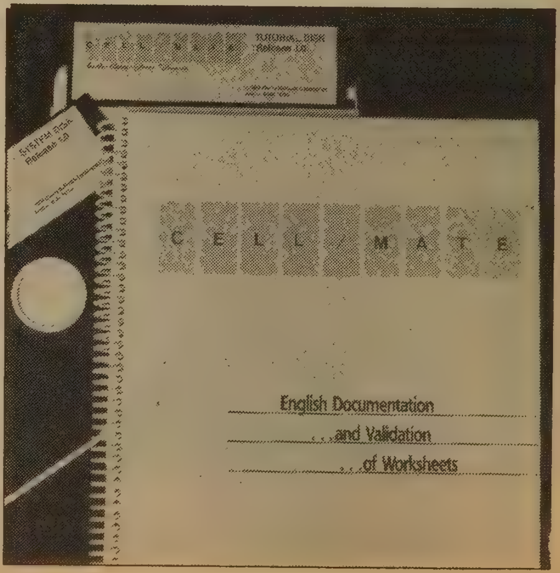
Macropac International has released an enhanced version of its *101 Macros For Lotus 1-2-3*. Due to the upgraded 2.0 and 2.01 versions of *Lotus 1-2-3*, all the macro's found in *101 Macros* are written in both the 2.0/2.01 language and *Lotus 1-2-3*'s original 1A language. The time saving two-keystroke combinations work without any prior set-up. ($69.95) Macropac International, 19855 Stevens Creek Blvd., Suite 168, Cupertino CA 95014. (800) 227-2400, x. 945.

Control Projects With Schedule Grafix



Schedule Grafix From Digital Engineering is Personal Scheduling Graphics Software (PSGS) that works as an add-on to *Lotus 1-2-3*. It enables a user to schedule, lay-out, graph and control all phases of a project. Designed for the typical PC user, it gives individual users access to sophisticated software without months of training and hours of setup. Digital Engineering, Engineering & Programming Consultants, P.O. Box 6076 Glendale, AZ 85312-6076. (602) 439-3245.

Cell/Mate Makes Spreadsheets Clear



Clarity Software's new release of Cell/Mate produces automatic English documentation of *Lotus 1-2-3* and *Symphony* worksheets. It also provides over 30 error-checking reports. The new release supports expanded memory boards conforming to the LIM standard such as the Intel AboveBoard and the AST RAMpage. The new release is available to current registered users for a $35 upgrade fee. Otherwise the price is $89. Clarity Software Corporation, 13276 Research Blvd., Austin TX 78750. (800) 822-7890.

Full Services At Discount Prices
We Speak Plain English To
First Time Computer Buyers

GRAND OPENING

Bring In This Ad
For FREE Gift!

VICTOR VPC II XT Compatible

20 MB MONO SYSTEM
- PC Magazine-Editors Choice (Oct 86)
- True 16 Bit 8086 CPU at 4.77MHz
- ST 225 20 MB Hard Disk
- 360K Matsushita Floppy Drive
- 101 Key AT Style Keyboard
- 640K RAM
- Built In Serial & Parallel Port
- MS DOS 3.2 Plus VBASICA
- Made In Japan-Unmatched Quality.
- Full Documentation-Hard Bound
- Full One Year Warranty
- 90 Day Xerox Americare Service on CPU
- Other Configurations Available

$1295

VICTOR V286 AT Compatible

30 MB MONO SYSTEM
- 80286 CPU 6/8 MHz Selectable
- 512K expandable To 1 MB
- Memory Expansion to 10 MB
- 6 8/16 Bit Expansion Slots
- Built In Parallel/Serial Ports
- Real Time Clock W/Battery BackUp
- MS DOS 3.1 Plus VBASICA (GW BASIC)
- Seagate 30MB 4038 Drive
- 1.2 MB Floppy Disk
- Full Documentation Hard Bound
- Full One Year Warranty
- 90 Days Xerox Americare Service On CPU

$2395

WYSE 286 Multisync Vega DeLuxe

20 MB EGA SYSTEM
- Top Rated By Norton Utilities In Speed Performance
- 640K B Expandable To 1 MByte
- 80286 CPU 6/10 MHz Front Panel Selectable
- VEGA DELUXE EGA Adaptor
  Auto Switchable EGA/CGA/Mono
- NEC Multisync 800x560 resolution
- Upward Compatible To PGA, Will Not Become Obsolete
- 1.2 MB Floppy Drive
- MS DOS 3.1 Plus GW BASIC
- Full Documentation
- Full One Year Warranty

$2795

PRINTERS

HP LaserJet II	CALL
Epson FX86E	$369
Epson FX286E	529
Epson EX800	439
Epson EX1000	579
Epson LQ800	489
Epson LQ1000	709
Epson LQ2500	1099
Toshiba 321	485
Panasonic 1091i	335
Brother 1509	395

MONITORS

NEC Multisync	$565
Casper EGA	419
Casper Mono 12″	99
NEC Mono 12″ TTL	109
Quimax 14″ Mono w/Tilt & Swivel	135
RFS 14″ Mono W/Tilt & Swivel	119
Samsung 12″ Mono 2/T & S	99

MODEMS

Volk Int	$109
Avatex 1200 HC	129
Signalman 2400 Ext	309

ADD ON CARDS

EGA Vega De Luxe	$335
EGA NEC GB1	339
EGA Paradise Auto Switch	289
XT Mem Expansion 2MB,OK	119
AT Mem Expansion 4MB, OK	139

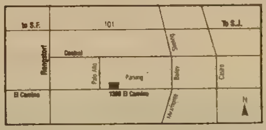
ACCESSORIES

Networx Power Surge Protector
Mouse System/Dr Halo II
Power Center
Keyboard Cover & Copy Holder

Every day LOW Prices On Supplies
Media- Fuji, Xidex, TDK
Paper- ProPrint, SCM
Ribbon-Data Product,
Connectors; Pelican Cables;
Switch Boxes; DataBank; Power Supplies, Etc.

CIMPEX Computer Supplies

One Stop Shopping For Your Computer Needs



1398 El Camino
Mountain View
(415) 964-5000

Price subject to change without notice

SOFTWARE CONNECTION

1-800-543-1445

(707) 762-0686

ALPHA SOFTWARE	
Alpha 3	199
Keyworks	47
ASHTON TATE	
DBase III+	CALL
DBase III+Lan Pac	CALL
Framework II	CALL
BORLAND SOFTWARE	
Reflex	82
Reflex Toolbox	39
Sidekick CP/NCP	29/47
Superkey	38
Turbo Editor Toolbox	39
BRODERBUND	
Print Shop	30
Print Shop Companion	30
Print Shop GRA Disk	21
Toyshop	37
COMPUTER ASSOCIATES	
Supercalc 3	250
Supercalc 4	267
Spreadsheet Auditor	79
DAC SOFTWARE	
Dac Easy Accounting	48
Dac Easy Payroll	30
DESIGN SOFTWARE	
DS Backup Plus	41
DS Recover	27
ENERTRONICS RESEARCH INC	
Energraphics 2.0	318
EXECUTIVE SYSTEMS	
Hot	41
Xtree	29
FOX & GELLER	
Quickreport	142
GENERIC SOFTWARE	
Auto Dimension	29
Auto Convert	17
Generic Dot Plot	17
INFOCOM	
Cornerstone	54
Games	24-31
IMSI	
Dr Halo II	67
LEADING EDGE	
Word Proc. w/Merge	59
LIFETREE SOFTWARE	
Volkswriter 3	145
Volkswriter Deluxe+	66
Words & Figures	138
LOTUS DEVELOPMENT	
Lotus 1-2-3	275
Lotus Hal	108
MERIDIAN TECHNOLOGY	
Carbon Copy	108
MICRO DATA BASE SYSTEMS	
Knowledgeman/2	279
MICROPRO INTERNATIONAL	
Wordstar	175
MIGENT	
Ability	54
Enrich	212
MONOGRAM	
Dollars & Sense	72
NORTON LAMBERT	
Norton Commander	39
Norton Utility	49
PERSONICS	
Smartnotes	43
PROSOFT	
Fontasy	39
ROSESOFT INC	
Prokey	71
SIMON & SCHUSTER	
Typing Tutor III	28
SOFTSTYLE	
Printworks (Dot Matrix)	42
Printworks (Laser)	70
SOFTWARE DIRECTION INC	
Print Q	62
SOFTWARE TOOLS	
Viewgen	76
UNISON WORLD	
Printmaster Plus	32
WORD PERFECT	
Word Perfect	199
XEROX	
Ventura Publisher	430

CALL FOR MONTHLY SPECIALS!
PROGRAM NOT LISTED? CALL!

Order by Mail: Certified Check or Money Order, Personal Checks allow 10 working days to clear

Order by Phone: C.O.D., Cashier Check or Approved Company P.O. Prices reflect a 3% cash discount. Discovery Card accepted 3%.

Please add $3.00 per order for shipping and handling charges. Prices and availability subject to change without notice. California residents add appropriate Sales Tax. Defective merchandise returns must be accompanied by RMA number.

Name ____________________
Address ____________________
City ______________ State ______ Zip ______
Telephone (______) ____________________

Quan.	Description	Price
	Subtotal	
	Tax	
	Shipping	
	Total	

Send to Software Connection
244 Banff Way
Petaluma, CA 94952

Due to our low prices we are unable to offer Master Card and Visa

SAN LEANDRO COMPUTERS *Their "Sale" Prices Are Our Everyday Prices!*

"CLONE KILLER" SPARES CLONES!!! THANK YOU! "CLONE KILLER", SALE!!!

We Salute Mr. John Akers, President IBM, and Mr. William Gates, President, Microsoft and ALL at IBM & MICROSOFT for giving us New Hopes, a Brighter and More Prosperous Future, New Standards of Achievements, Giving the Entire PC Industry & Users a New Direction, Better and More Meaningful Goals to Achieve. We Thank You for Providing us with a New Impetus to Compete and Freedom for Free Enterprise.

We Have No Illusions — whatsoever — That You have the Technology, Human and Financial Resources, and Power to Kill the Clones and the Clone Industry. But True Leaders of Free Enterprise and Free Competition Always Provide Vision for the Future, and Catalysts for Free Enterprise and Fair Competition.
Leaders are Custodians of Power, Not Usurpers of Power.

Let History Witness Today, That You Lived up to the Social Responsibilities Vested in You by the PC Industry and PC Users of Today and Tomorrow.

The History of Corporate America Has Never Evidenced and Witnessed Such an Example of Social Responsibility. That is What America is all about!!!

WE APOLOGIZE!!!

For the typographic and proofreading errors made by Computer Currents in our advertisement in the 5 May — 18 May issue of CC, page 58, 60, 61. We deeply regret the inconveniences caused to our valued customers. The corrections have been made in the following pages.

IBM XT Sale!

IBM XT 20MB - 640K Mono/EGA Color System

.... $1575/$2195

PRICE INCLUDES: New IBM XT, 1 IBM Floppy Drive, Seagate 20 MB, ST-225, 65 MSec., Hard Drive, 640K RAM, Everex Hercules compatible 80/132 columns Monographics Hi-Res Display Card/Printer Port, Amdek 310A Hi-Res., Amber Monitor, IBM Enhanced Keyboard, Clock/Calendar.

EGA COLOR SYSTEM: SAME except with Nanao 8060 H monitor and Everex enhanced EGA card.

IBM XT 30 MB - 1 MB, 360 & 720 Mono/EGA System

.... $1987/$2587

PRICE INCLUDES: New IBM XT, 1 IBM 360KB, & 1 720KB New IBM Standard 3.5" TOSHIBA Floppy Drives, 30 MB SEAGATE, 65 MSec., ST 238 Hard Drive. 1 MB LOTUS/INTEL/MS EMS RAM, Clock/Calendar, Serial/Parallel/Game Ports, Everex Hercules Compatible 80/132 columns Hi-Res Monographics Display Card, Amdek 310A Hi-Res., Amber Monitor, IBM Enhanced Keyboard, EMS RAM Expandable to 1.640MB for Only $99.00 Extra.

EGA COLOR SYSTEM: SAME Except with NANAO 8060 H Monitor, and EVEREX ENHANCER EGA/CGA/MONO/HERCULES Emulation Card.

ARGO XT 640K-20MB Professional System $1275

**2nd Floppy-Drive Only $79 Extra*

Fully Compatible With New IBM XT!! Better Value Than Leading Edge D! Price Includes: 640K RAM, 1 Floppy Drives*, Seagate 20MB, 65 MSec, Hard Drive, Serial/Parallel, Game Ports, Clock, Calendar, Super Hi-Res Hercules Compatible Everex Mono-Graphics Display Card and Amdek 310A Hi-Res Amber 720 x 350 Monitor. New AT style Keyboard. 1 Year Warranty. 30 MB Seagate HD Only $69 Extra. MS DOS/Basic 3.2 Only $79 with system.

THE PC UPGRADERS *We Make Obsolescence Obsolete!!!*

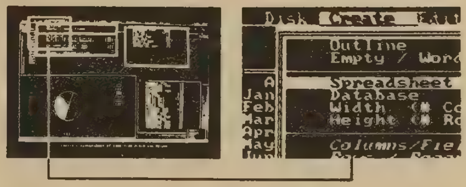
15099 Hesperian Blvd., San Leandro, CA 94578 Phone: 415-276-2211 Hours: M-F, 10 AM-6 PM Sat. 10 AM-4 PM

This monitor beats the wits out of NEC Multisync!

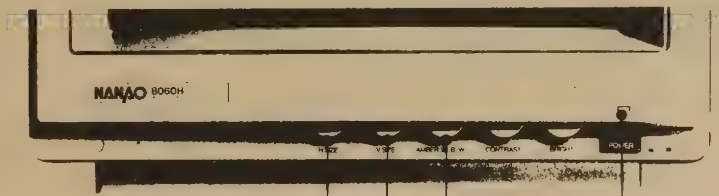
NANAO Model 8060 the multi-scan frequency monitor for multi-scan graphics adapters. Model 8060 — the brighter and higher resolution flexible-scan color monitor.

The highest resolution CRT in its class

On the model 8060S, we provide a 14-inch (13''V), 0.28mm dot pitch high resolution CRT. It is the highest resolution CRT among different monitors for CGA, EGA and PGA. We also have the model 8060H, which has a 14-inch, 0.31mm dot pitch CRT, similar to other EGA-monitors and multi-scan system monitors. The reason we didn't stop there is that we know the capability of the newest graphics adapters for the IBM PC, XT and AT. Down loadable fonts is one of the most exciting features of these adapters, and they provide fonts of as small as 5x6 character box. In order to get the most out of your software, and take advantage of RAM fonts, try the model 8060 — you'll appreciate the difference.



	NANAO model 8060S	NEC MULTISYNC	IBM PGD
CRT Trio pitch	0.28mm	0.31mm	0.31mm
Horizontal dots	820	800	640
Vertical lines	620	560	480



SIZE Adjustment
4 points 10mm step Horizontal SIZE adjustment and stepless Vertical SIZE adjustment provide perfect H/V aspect ratio.

TEXT Mode
Characters are switched to Amber or White in every mode White characters mixed with light original colors and intensity makes it easy to find important part of display

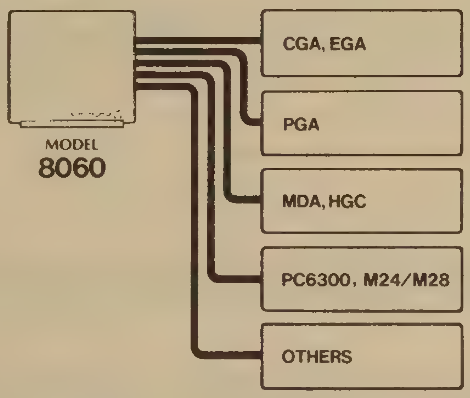
SIGNAL Indicator
The power indicator lamp also indicates TTL signal mode with Orange light and ANALOG signal mode with Green

Specifications

CRT Trio pitch	0.28mm 8060S, 0.31mm 8060H*
Size	14" (13V) 90°
Face treatment	Dark face, Non-glare
Standard Display size	250mm × 167mm
Recommended Resolution	820 horizontal dots 620 vertical lines
Video Band Width	30MHz minimum
Dimensions(mm)	356(W) × 325(H) × 400(D)

Wide compatibility

Model 8060 is fully compatible with all standard Color Graphic Adapters from IBM. Scan frequency, number of colors, display size and position are automatically adjusted.
It also supports AT&T PC6300, OLIVETTI M24/M28 users with automatically adjusted full size display.



	NANAO model 8060	NEC MULTISYNC	IBM EGD	IBM PGD
PGA	●	●	—	●
EGA	●	●	●	—
CGA	●	●	●	—
MDA, HGC	●	●	—	—
AT & T PC 6300 OLIVETTI M24·M28	●	Proper display size not adjustable	—	—

Automatic scan frequency adjustment for horizontal and vertical frequencies. Both horizontal and vertical scan are automatically adjusted to those of display boards and computers. On NEC MULTISYNC, vertical sync. has to be manually adjusted.

COMPARISON BETWEEN NANAO FLEXSCAN (8060H) AND NEC MULTISYNC

Item	NANAO FLEXSCAN	NEC MULTISYNC
Scan frequency		
Horizontal	15.5KHz - 35KHz (auto)	15.5KHz - 35KHz (auto)
Vertical	50Hz - 80Hz (auto)	56Hz - 62Hz (manual)
Horizontal size adjust		
Position	Front	Top (under the Lid)
Number of steps	4 positions	2 positions
Range (EGA)	235mm - 265mm	245mm - 255mm
Range (AT&T PC6300)	242mm - 270mm (overscan)	195mm - 205mm
Vertical size adjust		
Position	Front	Top (under the Lid)
Range	135mm - Overscan	110mm - Overscan
Brightness (EGA		
High-white	95 ft-L	70 ft-L (115)
White	50 ft-L	20 ft-L (40)
Gray	30 ft-L	15 ft-L (35)
Test Mode Switch		
Available with	Any adapter (TTL/Analog)	EGA, CGA only
Intensified text	Yes	No
Switch position	Front	Back and Top
Dynamic raster regulation with EGA	No distortion due to the bright pattern	Distortion due to the bright pattern

*MODEL 8060H $595 *MODEL 8060S $649

THE PC UPGRADERS

We Make Obsolescence Obsolete !!!

15099 Hesperian Blvd., San Leandro, CA 94578 Phone: 415-276-2211 Hours: M-F, 10 AM-6 PM Sat. 10 AM-4 PM

UPGRADE YOUR PC TODAY!

We specialize Exclusively in UPGRADING your IBM PC/XT/AT, Compaq, and Compatibles.

WE SALUTE SEAGATE SALE!!!

THE BEST NAME IN HARD DRIVES — SEAGATE!

OVER 12,000,000 SATISFIED USERS!

We salute all at Seagate technology for consistently providing, since the dawn of the IBM PC industry, quality hard drives at affordable prices. It is a record that no one in the history of the IBM PC industry has ever even come close to matching! We salute you all at Seagate for your determination and persistence in manufacturing only the best in hard drives. We are proud of you all at Seagate! You are the best!

Seagate

ST-225, 20MB Kit

$309

Complete Kit with WDC Controller Card, SEAGATE 65 MSec, HD, Cables, Installation Software and Hardware. **Brand New. Fully Tested/Formatted. 1 Year Warranty.**

Seagate

ST-238, 30 MB Kit

$366

UPS shipping available only for pre-paid orders. Please add 7% CA. sales tax and $9.00/per drive for shipping/handling/insurance. Out of state: add only $14.95 for shipping/handling/insurance.

NEW

SEAGATE 40 MB* HI-SPEED HD KIT $666

Hi-speed, half height hi-performance (rated under 40 Msec (core test 32-36 Msec.), voice coil kit with 40MB WDC controller card. Fully tested, formatted, & installed by us professionally. Available for use only in IBM PC/XT, Compaq, Leading Edge, ATT, and most IBM compatibles. 1 year warranty.

*For quality control reasons, 40 MB HD kit sold only if installed by us professionally. Installation charges: IBM PC/XT $19.00, Compaq DP $39.00, Leading Edge/AT&T $49 (free with trade of B floppy) Compaq portable $49. IBM look alike compatibles with slide-in case $39, with flip top case $69.

NEW

The one and the only — one slot hardcard 20MB $649

Most plus development hardcard clones are in fact 3.5" hard drives & controller card mounted on a metal frame; therefore, they use 1½ slots and more power. Why limit the potential of your second slot and waste your money and PC slots!!!

NEW

We stock hard drive installation parts you are looking for!

Power Y splitter $9.00, AT rails set $9.00, Compaq rails/power cable set $19.00, HD cable set $9.00, two HD daisy chain cables set $19.00, two half ht. drives mounting brackets $7.00, Speedstor low level/DOS automatic formatting/partitioning/diagnostics software for up to 320MB hard drives. Single DOS volume. Break the 32 MB DOS barrier with Speedstor! $69

RESELLERS:

Use your cash and save! If you buy 2-10 drives, we can offer you very competitive prices. For pricing information, please mail or bring a copy of your resale permit, business card, and phone number. No phone inquiries please. Only cash/certified funds. UPS available for pre-paid orders. No COD orders.

THE PC UPGRADERS

We Make Obsolescence Obsolete !!!

15099 Hesperian Blvd., San Leandro, CA 94578 Phone: 415-276-2211 Hours: M-F, 10 AM-6 PM Sat. 10 AM-4 PM

Everex Super Sale!

Call them first! Then visit our approx. 4000 sq. foot show room/service center.
Buy from us or them! But please compare and feel the difference!

Club AT Inc. *QIC Research Inc.* *ELTECH* *Computer Library* *S.F. Micro* *Fry's*

Everex AT System 1800 30 MB — 1 MB System

$1888

Fully compatible with IBM AT — over 30,000 sold!!!
Price includes: 1 MB RAM, 30 MB Seagate Hi-Speed AT Hard Drive, 38 MSec, 1.2 MB or 360 KB floppy, floppy/hard disk controller, Everex Hercules compatible 80/132 columns Hi-Res. Monographics display card. Printer Port. AMDEK 310A monitor, printer port, **enhanced AT style keyboard,** clock/calendar, AMI BIOS with built in set-up utility, long life battery, 200 pages of documentation, UL/CSA approved 195 watt power supply, software three-ring binder, 96-hour burn-in. Made in USA by Everex, 1 year warranty, excellent customer/user references available on file. MS/DOS Basic 3.2 only $79 Extra.

Everex AT System 1800 30 MB, & 1 MB EGA System

$2495

Same System as described above except with Nanao 8060 H better than NEC - Multisync monitor and Everex Enhancer EGA/CGA/MONO/Hercules Emulation Display Card, and Parallel/Serial Ports.

Everex Micro Enhancer EGA/CGA/MONO/Herc. emulation	**$199**
Everex Evercom 12 300/1200 baud modem	**$94**
Everex Evercom 24 2400 baud modem	**$189**
Everex Excelerator 80286-8MHz, turbo card with 640K RAM	**$399**
Everex multifunction (like AST 6-PAK) with 384K RAM	**$179**
Everex Magic-16, AT 2MB multifunction card with 1MB RAM	**$319**
Everex Magic-16, AT 2MB multifunction card with 2MB RAM	**$399**
Everex PC/XT/AT EMS-Lotus/MS/Intel card with 1MB RAM	**$249**
Everex PC/XT/AT EMS-Lotus/MS/Intel card with 2MB RAM	**$379**
Everex Magic I/O PC/XT/AT serial/parallel card	**$69**
Everex AT 16 bit floppy/hard drive card WDC chipset	**$175**
Everex PC/XT floppy/hard drive combination card	**$139**
Everex 20MB, 5MB/min speed tape backup int./ext.	**$555/$666**
Everex 60MB, 5MB/min speed tape backup int./ext.	**$749/839**

No slot smart clock for PC/XT	**$29**
Speedstor hard disk formatting utility	**$69**
VP Planner — Lotus 123 Superclone!	**$69**
Brother 1409M, 180CPS 11″ DP/NLQ Epson mode printer	**$319**
Brother 1709M, 240CPS DP/Bold/NLQ, 10/12/17/PS printer	**$549**

All prices and/or the above refund offer subject to change anytime without notice.
Sorry, we do not accept credit cards.

Repair your PC today No minimum charges

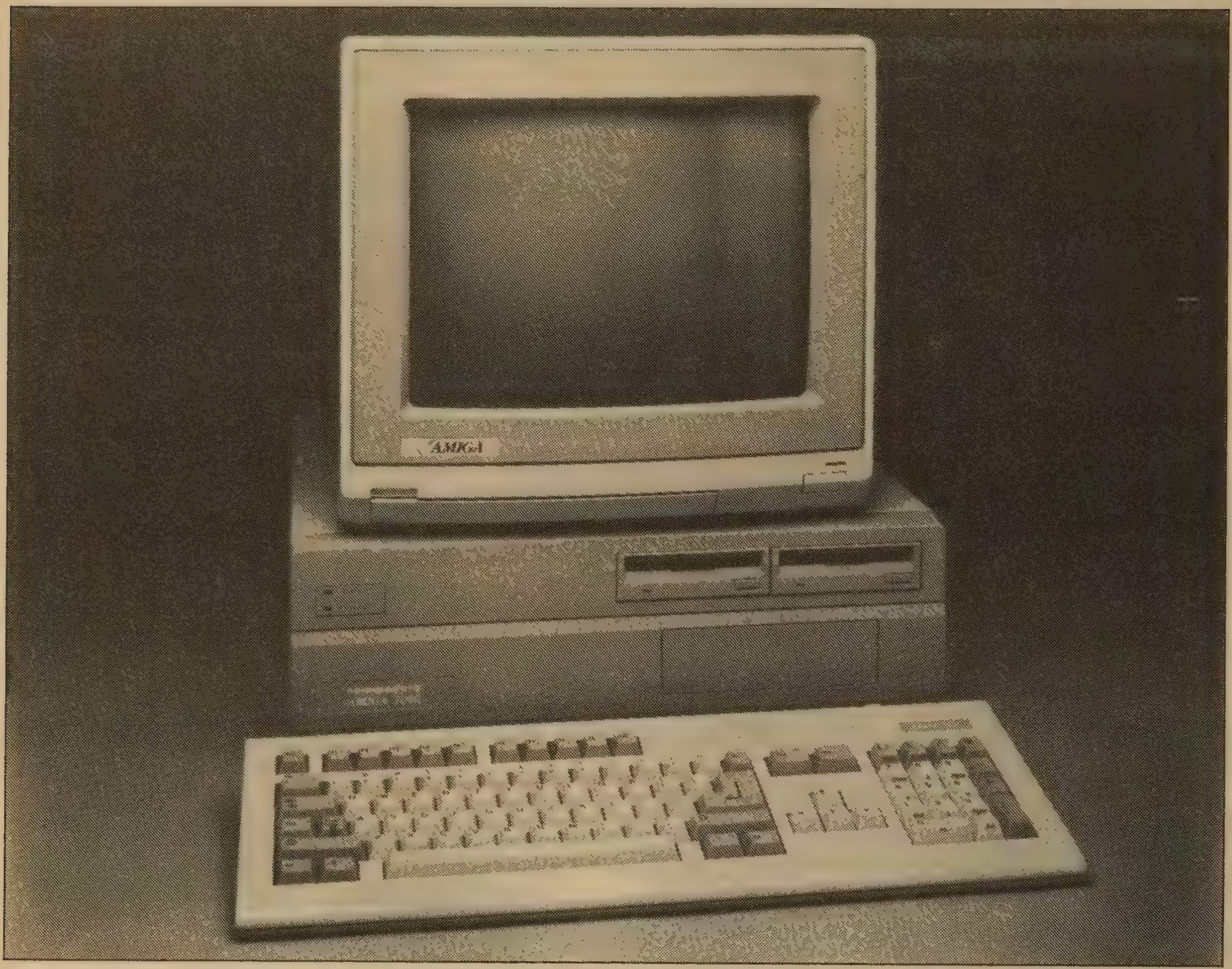
We have full repair facility for IBM PC/XT/AT/Compaq and most IBM look-alike compatibles.
Free testing, trouble shooting. All work done with prior approval. Free estimates.

THE PC UPGRADERS

We Make Obsolescence Obsolete !!!

15099 Hesperian Blvd., San Leandro, CA 94578 Phone: 415-276-2211 Hours: M-F, 10 AM-6 PM Sat. 10 AM-4 PM

THE AMIGA 2000



Power, Expandability, And IBM Compatibility

If you were in charge of redesigning the A1000 Amiga, what would you do? Add additional memory, space inside the machine for a second floppy, and maybe a hard disk? How about putting Kickstart in ROM? And just for kicks, room for expansion cards, including one that will provide IBM compatibility? Commodore has done just that and more with the new A2000.

The Amiga A2000 will be compatible with all existing software that runs under Kickstart 1.2. Software that requires Kickstart 1.1 will not run correctly, or may not run at all. I expect that software publishers with products that require KS 1.1 will soon release updated versions of the products. Kickstart will be contained in ROM on a daughterboard that contains five sockets. Four of the sockets will accept 256K EPROMS, and the A2000 will ship with these sockets filled. The fifth socket will be able to accept a custom two megabyte EPROM or ROM that Commodore is preparing. By socketing Kickstart, Commodore is leaving an upgrade path open to new versions of Kickstart. Possible options include a version that will boot off a hard disk, and other operating system improvements.

The A2000 will come standard with one megabyte of RAM. The mouse ports have been moved to the front of the machine, and the 86-pin external bus expansion connector has been eliminated. The other ports have been rearranged and modified. The serial, parallel, and RGB ports are now IBM standard as opposed to Amiga standard. The composite video and RF connectors are gone, replaced by an internal video slot that will accept a video output card, to be available sometime in the future. The video card will be available in NTSC and PAL versions and will provide RF output also. A battery backed clock/calendar is now standard. An external drive connector still remains. Most hardware peripherals that connect to the A1000 may require adapters or redesign to function correctly on the A2000.

The entire case is taller. The main reason for this is the addition of internal slots for card expansion. The A2000 is full of new slots. Aside from the already-mentioned video and internal drive slots, there is an 86-pin CPU slot and an odd mix of Amiga and IBM slots. The Amiga slots are 100-pin Zorro new form factor (similar in size to IBM cards but not compatible with either IBM cards or the current Zorro form factor for chassis expansion of the A1000). There are two IBM AT-style slots and two XT-style slots. The XT-style slots can be upgraded to AT-style with the addition of edge connectors to the motherboard. The traces already exist on the motherboard.

The odd mix has to do with the physical alignment of the slots. The two AT-style slots are in line with two of the Amiga slots. This allows for a card to "bridge" between the two types of slots. Commodore has produced a card called the bridge card, designed to fit into one of these slots, that adds IBM compatibility to the A2000. More on this later. The physical arrangement of the slots lets you vary the number of IBM slots and Amiga slots available, depending on where you place a bridge card.

The CPU slot provides unbuffered access to the 68000 chip. This may be the place to put a 68020/68881 board, or co-processors. There are quite a few custom chips in existence that would optimize the A2000 for specific vertical markets, and the CPU slot is a perfect place for them.

Commodore will be offering Amiga expansion boards for the A2000. Two boards will initially be offered, a two megabyte board and an eight megabyte board. Each will be available partially populated, so that you can add RAM as your budget allows. A hard disk drive controller board will also be offered. It will support either ST506 or SCSI drives. Since SCSI devices can be daisy-chained, the controller is capable of handling up to seven SCSI devices.

Perhaps the most popular expansion board for the A2000 will be the A2088 bridge card. This is essentially an IBM PC/XT on a card. It will contain an 8088 CPU running at 4.77 MHz, an IBM compatible ROM BIOS, socket for an 8087 math co-processor, a floppy disk controller that will handle up to four drives, room for up to 512K RAM (256K standard), and a custom VLSI to emulate most of the hardware capability of an IBM PC/ST.

The A2088 bridge card will also contain two VLSI chips that handle the communication between the Amiga and the PC/XT sides of the board. That communication takes place in an area on the board known as dual-ported RAM. This is a 128K RAM space that has its address and data buses connected to both the Amiga and PC/XT. As far as the Amiga is concerned, the PC/XT system is another process running in a window on the Amiga. This is known as the PCWindow task.

You will be able to partition an MS-DOS hard disk to use part of it under AmigaDOS. The A2088 emulates the CGA video standard of the IBM. You could use a graphics card to gain additional resolution/color, but you would need to connect the graphics card to a separate monitor.

What does all this mean to the current users of Amigas? There is no question that the A2000 will be popular, or that expansion is a much simpler task with its vast internal spaces. Not yet clear, however, is when Commodore will be able to deliver the A2000 and its family of expansion peripherals. Given their track record to date, I would counsel prudence and/or patience if you decide to wait for it. Since software compatibility is solid, we may see another burst of new developers coming into the Amiga marketplace. The changes in hardware architecture will hurt peripheral manufacturers, but most will be able to redesign their products to function.

One thing is certain. Commodore has bet the company's future on its line of Amiga computers. The stock market has been reacting favorably so far, but then just about every high tech stock has been on an upward move. The last three quarters have been profitable, and this alone may be the final arbiter of Commodore's direction. ☐

Copyright © 1987 by Matthew Leeds. All rights reserved.

The Lap Top Experts Do It Again!

Introducing The Datavue Spark and Snap Laptop
"The Laptop For People With Brains Enough To Know The Difference"

The SPARK

From **$995**

Includes:
DOS, Dual Speed 4.77/9.54 MHz Processor, RGB Composite, Serial, Parallel Ports, 3½″ Floppy Disk Drive
Options Available:
2 Optional Screens-Supertwist or Backlit Supertwist Flat Panel, 1200 Baud Modem, Memory Expansion, 5¼″ Floppy Drive & 2 Different Power Batteries.
Configure To Your Own Needs!

The SNAP
Includes A 1/2 Card Expansion Slot!!

$1995

Includes:
640K RAM, 2 3½″ Floppy Drives, AC Power Adapter, RGB Composite, Serial, Parallel Ports, DOS, Supertwist Flat Panel Display
Options Available:
3 Screens To Choose From—Supertwist, Backlit Supertwist, Amber Gaslight, 20 Meg Hard Disk, Optional RAM/ROM Card, 2 Different Power Batteries, 5¼″ Floppy Disk, 1200 Baud Internal Modem.
Configure It To Your Own Needs!!

Special Limited Offer on Bondwell Computers

• Bondwell 2 Lap Top (CP/M) Includes Wordstar more	$495
• Bondwell 12 (CP/M) Transportable Includes Wordstar & More	$395
• Bondwell 14 (CP/M) Transportable Includes Wordstar & More	$445
• Bondwell 18 IBM Compatible Transportable 512K RAM System	$645
• Bondwell 34 IBM Compatible Desk Top 256K Expands To 640K 2 Drives	$424

KAYPRO-MADE IN U.S.A. FOR YOU
Kaypro 286i AT Compatible

40MB Hard Disk	$2695
10MHz, 640K RAM, 1.2MB Floppy, AT Style Keyboard, 8 Slots, 40MB Hard Disk, Complete Software Package With EGA Card & Monitor	$3295

Kaypro 386 16 MHz. . . . . . .Now Here. . . . . . .From $4195
512K RAM expandable to 16Mb, 1.2 MB Floppy, 7 Slots, Superior to Compaq 386! Come See Why!
Many Kaypros Come With New Release 4 Wordstar Professional with 125 New Features & DOS 3.21

Call For Best Kaypro Prices In The Bay Area

master charge VISA

COMPUTER INSIGHTS
Specialists in Computer Applications to Business

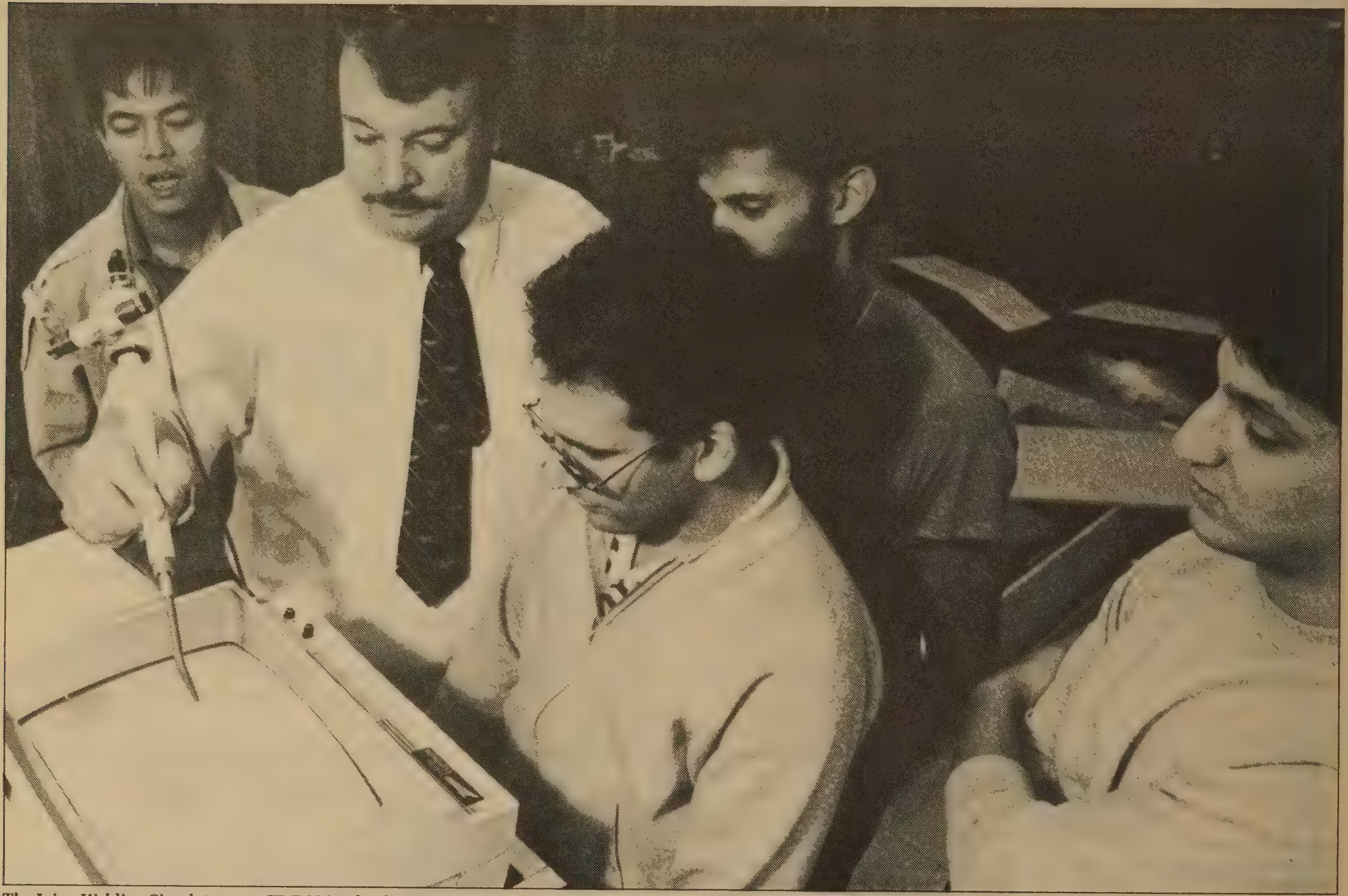
We Will Meet or Beat Any Advertised Kaypro Price On New Products

40961 Grimmer Blvd., Fremont, CA 94538 (across from Tri-City Sports) (415) 490-0685

Microsoft's Second International CD-ROM Conference

CD's Potential Begins To Unfold

By Terry Parkhurst



The Ixion Welding Simulator uses CD-ROM technology for more effective hands-on training and reduction of time required to learn skills.

Standing in a buffet line at the end of the fourth day of this year's Microsoft CD-ROM conference in Seattle, Washington, computer columnist and science fiction writer Jerry Pournelle was heard to say, "Well, at least this year I won't have to say that Bill Gates looked like a man who was holding a cat by the tail like I did last year."

Indeed, things this year were much more self-assured all the way around, from the strong show of faith in CD-I (compact disk interactive) by the Dutch firm of Philips, an industry pioneer, to the impressive motion video demonstration of CD-ROM by RCA, right up to the closing lecture by PBS TV star James Burke, who spoke on the social mechanism of change and championed the computer industry in general against those who would reproach today's generation for preferring bytes over books. In much the same way that Marshall McLuhan championed television against the forces of the status quo (whose defenders Burke wryly defined as the BBC and the Vatican), Burke explained his belief that the present state of the culture is less a matter of illiteracy than of the beginning of a new literacy, that of the electronic age.

In the year since Microsoft's first CD-ROM conference, an industry focused on CD-ROM has begun to blossom to support the perceived consumer demand for the mega-storage CD-ROM offers. With a storage capacity of up to 550 megabytes (440MB) of data on a disk less than five inches across, a CD-ROM offers the equivalent of 1,500 floppy disks, 270,000 printed pages, 5,000 images or sixteen hours of sound. And the biggest beneficiaries of the onset of this new technology are likely to be the personal computer users, who will no longer have to feel locked into accessing on-line databases for their sole source of mass data.

Bill Gates, Microsoft's chairman, announced at the conference the development of optical disk software for the European market in a joint venture with Olivetti and SEAT (Societa Elenchi Ufficiali al Telefono p.A.).

CD-ROM also promises to greatly facilitate the world of education and training. Several new, exciting product announcements at the conference promised to make the accessing of information by users much less involved than at present with the use of both touch-screen access and enhanced computer graphics.

CD-ROM, in that sense, promises to greatly expand the "intellectual bandwidth" that John Sculley speaks about and make well-informed generalists of all those with access to a personal computer, a CD-ROM disk and the necessary disk drive.

Whether or not CD-ROM proves in the long run to be as revolutionary to the computer industry and consumer as the appearance of the personal computer itself, it appeared at this conference that many industry analysts and manufacturers see the tip of an iceberg.

Dr. Alan Kay, Apple Fellow for Ap-

Manager's Special Discount

10%

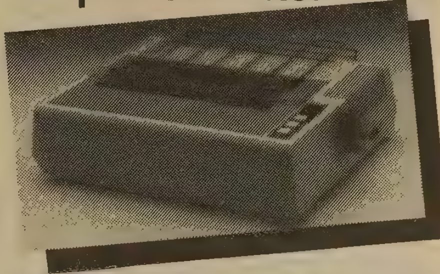
This ad shows only a fraction of our in store inventory.

IN STORE DISCOUNT WITH THIS COUPON

"If you don't see what you need. . . give us a call"

★★ *Special Purchase* ★★

CSS-5152 Graphics Printer



- 100% IBM 5152 Compatible
- IBM Parallel Interface
- IBM PC Graphics Compatible
- Easy Installation – Just Plug In
- 80 cps
- Cabel No. 5152 $10.00

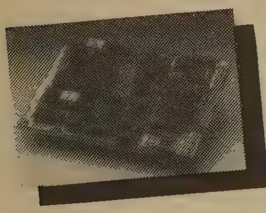
Our Low Price $169

TeleVideo 970 Terminal

- VT100, VT52, ANSI 3.64 Compatible
- Manual Included
- In Original Factory Packaging
- The Terminal Bargin of the Year

Our Price $199

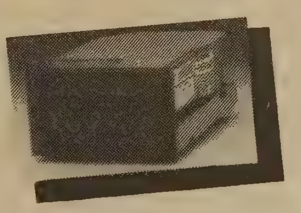
Shugart 1610–1/3/4



$79 OUR PRICE

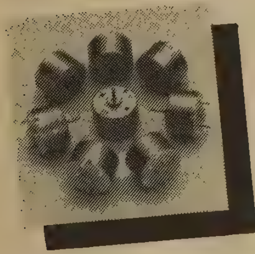
- 3 Firmware Sets (DTC-XEBEC-SCSI)
- 5¼″ Form Factor
- Controls 2 Standard 5¼″ Hard Drives
- SASI/SCSI
- Manual – $8 extra

Rodime RO203E



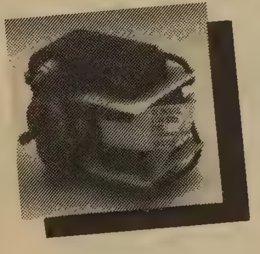
$425 OUR PRICE

- IBM-AT/XT Compatible
- 6 Heads, 640 Cylinders
- RLL Compatible
- 47 Mb with RLL Formatting
- 33 Mb with MFM Formatting
- Special RLL Controller and Drive $525



DC Motors
5 for $2
10 for $3

- Perfect for projects
- Fun for demonstrations
- 9Vdc



AC Motors
.99¢ ea.
10 for $7

- 110 Vac
- Powerful ac operation

Mail Orders
408-434-1060

MORE IN-STORE SPECIALS

POWER SUPPLIES

Switcher

AcDc Electronics (7x4.5x2.5) RS5N10-102-Enclosed +5V@10A	$19.95
Astec (7.75x4.25x2) AA11262 +5V@6A, +21V, +25V or +28V@1A, +25V@.2A	$19.95
Boschert 0L400-3015R (16.87x5.2x3.0) +5V@5A, −5V@2.5A, +12V@4A, −12V@4A, +24V@3A	$49.95
Compower (7.75x4.25x2) OL-50/65 +5V@6A, +28V@1A, −5V@.7A	$19.95
Matushita (7.5x2x4) ETU-12J40H Enclosed +12V@4A	$16.95
CSS (5.5x3.5x1.5) 83DA/8922 Open +12V@2A	$15.95
Data Power 51A0193-005 (6.25x10.75x2.5) +5V@13A, −5V@.2A, +24V@1.5A, −24V@2A, +12V@2A, −12V@1A, +12V@2.5A	$59.95
Deltron Q250B (13.5x2.5x4.75) +5V@30A, +12V@4A, −12V@4A, +24V@4A	$59.95

Linear

Powertec (3x6x5) 25-6B Open +5V@6A, +12V@1.5A	$15.95
Powertec (14x4.87x2.75) 2D24-7.5B +18V to 25.2V@6.8A to 7.5A	$29.95
Condor (15x4x5) DD15-15.0/OUP Open +15V@5A, −15V@5A	$19.95
Condor (10.5x3.5x6.5) CP564 Open +15V@6A, −5V@6A, +24V@4A, −12V@1A	$29.95
Condor FBB512 +5V@2A, +12V@4A	$25.00
Power One (5.62x4.87x2.5) HC 15-3.0 +15V@3A	$11.95
Power One (11x4.87x2.75) CP162 +5V@3A, +24V@5A, −5V@.6A	$29.95
Power/Mate EMA24C +24V@2.3A	$15.00
Lambda LYS-W-28 (5x9x3) +28V@9.5A	$39.95
Lambda M-YSW-2 LYS-W-28	$19.95
International Power IHC12-3.4 (4.87x5.62x2.5) +12V@3.4A	$19.95
International Power IHB5 3/0VP +5V@3A	$15.00
Xentek 100886-01 (23.5x5.25x5.25) ±5V@5A, ±121V@1A, −50V@1A	$19.95

CONTROLLERS

OMTI 20L/C SASI Controller	$95
XEBEC S1410A/S1410 SASI Controller	$109/95
XEBEC WD 1002-SHD (Xebec Clone) SASI Controller	$109
DTC 520B SASI Controller	$120
DTC 700 (Shugart 1408-I) Controller	$150
DTC 1404/1404D Controller	$125

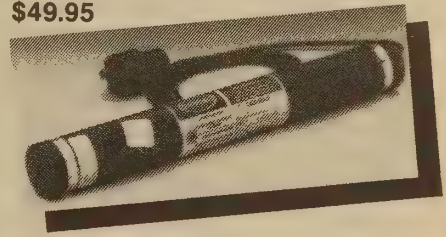
ADAPTEC CONTROLLERS

2002A IBM PC Controller	$85
2002A Upgraded to 2010A	$85
2070 IBM PC Controller (RLL)	$129
3530 SCSI to Tape	$99
4000A SCSI to ST506/412	$109
4070 SCSI to ST506/412 (RLL)	$129
4520 SCSI to ESDI	$139
5500 SCSI to ST506/412	$255
Manuals Available	$8 ea.

SPECIALS

Alignment Diskette DYSAN 206-10 (48 tpi Single Sided)	$5
Alignment Diskette Shugart SA145 (96 tpi Single Sided)	$7
S100 CCS 12 Slot Main Frame — Really Nice Box w/Pwr Supply	$60
Diablo 630 Bi-directional Tractors	$75
Miniscribe 3012 or 3212 12 Mb Hard Disk, ½ Height	$149.00
CSS 3522 12 Mb Hard Disk 3½ In. ½ Height	$149.00

Laser Tube ≈5mW HeNe
$49.95



- 1800–2000 Vdc
- P/S Kit $45
- Sample Power Supply Schematic Included

We have a large inventory of New & Used Peripherals, (Terminals, Monitors, Printers, etc.), and PCB's for many systems, (S100, Multibus, STD Bus, Q Bus, etc.). If you have a requirement give us a call, we may have it.

MAIL ORDER INSTRUCTIONS

Mail orders accepted on most items. Payments can be made via UPS COD, Master Card, Visa, or Prepay (Check or M.O. U.S. Dollars Only, No Cash). To eliminate Back-Orders please call prior to ordering so that we can reserve your items. Calif. Residents add 7% Sales Tax. Minimum Credit Card or C.O.D. Order $15.

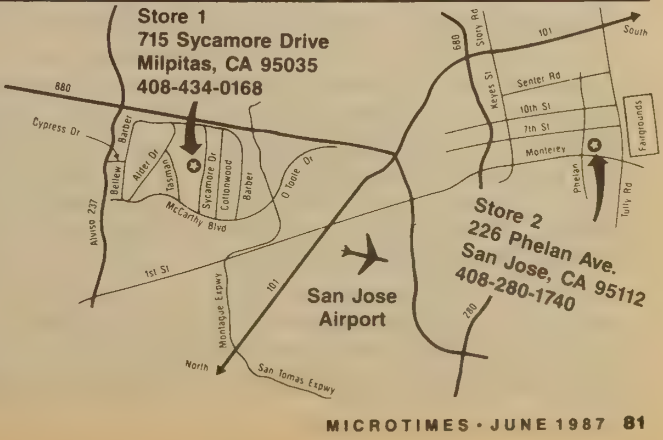
***Quantities subject to stock on hand. Minimum Order $5.00.**

IT'S LIKE A SWAPMEET EVERYDAY!!

Computer Surplus Store

Store One
715 Sycamore Drive
Milpitas, CA 905035
408-434-0168
FAX 408-434-0931

Store Two
226 Phelan Avenue
San Jose, CA 95112
408-280-1740
FAX 408-280-0518



© 1987 Computer Surplus Store

ple Computer, concluded his remarks on Wednesday by quoting an Italian philosopher to the effect that "to know the world, one must construct it." Kay then asserted, "In this context, the dream will be realized."

What follows are some of the highlights of that dream of CD-ROM becoming reality.

Ixion Welding Simulator

David Hon, the designer of this system, used much of the knowledge he'd gained from designing a self-teaching CPR (cardio-pulminary resuscitation) set up that used an interactive video disk. That system earned him the accolade of "genius" from the nightly network news team that covered it. His latest brainchild, a self-teaching welding simulator, landed him in the Smithsonian: the organization for whom he designed it, the Academy of Aeronautics at La Guardia, New York, is working to provide the Smithsonian with one after representatives from the museum saw the welding simulator at a trade show.

The training system consists of a Philips video disk player, an IBM PC micro, a color monitor with touch screen, a welding burner simulator and a printer. The real beauty of this system is the ease of operation — it's extremely user-friendly.

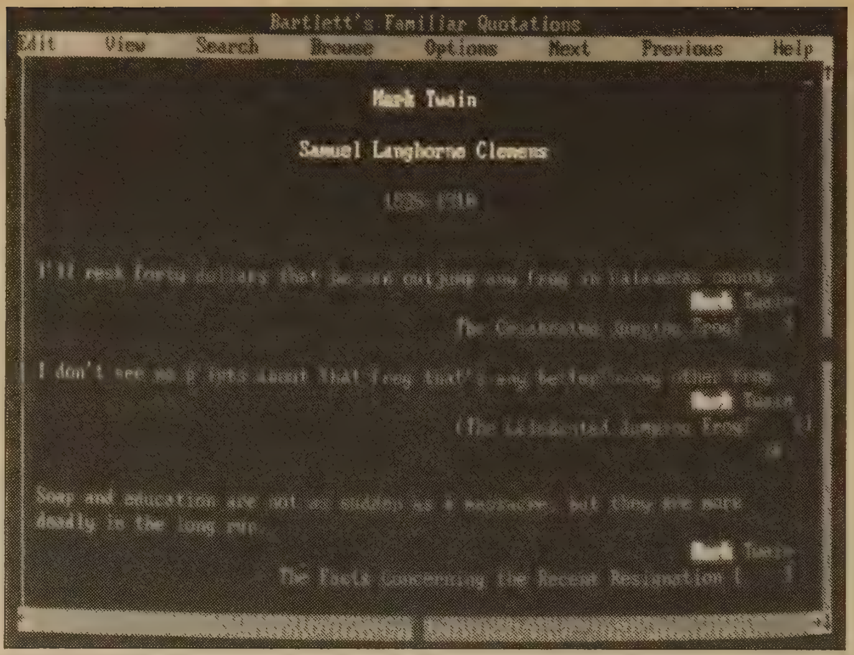
The video monitor is arranged horizontally on a cradle which makes up the work surface. An oxy-acetylene torch is linked electronically to the computer. It is possible to measure the output of oxygen and acetylene, as well as the three-dimensional position of the torch in relation to the work surface, merely by using a set of sensors.

With the Ixion simulator, what the student does determines exactly what appears on the screen. The student begins by using the touch screen to carry out the lighting procedure for a welding torch. If he makes a mistake, a teacher appears immediately on the monitor to give helpful advice. Once all the basic procedures have been properly carried out, a video image shows the ideal flame to be obtained.

The student then adjusts the taps until the flame below matches the ideal one above. Once this is done, the student is ready to "weld."

Two pieces of steel sheeting appear on the screen and the student, equipped with his welding rod and torch, heats the two pieces. A luminous spot appears on the screen corresponding to the impact of the flame. Depending on the angle, the distance of the torch and also on the speed of movement of the flame, the spot will vary, giving instantaneous feedback on the quality of the weld.

A margin of half a second is provided for this type of weld, to enable the student to change position. Once this time is exceeded, the video disk displays an image showing the real result of the incorrect positioning.



Bartlett's Familiar Quotations

Mark Twain

Samuel Langhorne Clemens

Microsoft's Bookshelf offers PC users access to a host of reference works, including Bartlett's Familiar Quotations, on a CD-ROM disk.

Fifteen to eighteen hours are required to learn this type of welding using traditional methods. Lee Strickland, the instructor at the Academy of Aeronautics who proposed the idea of preparing this simulator, hopes to cut the learning curve by half, increase safety and cut the costs of consumables with the Ixion video disk simulator. (David Hon, Ixion, Inc., 1335 North Northlake Way, Seattle, Washington 98103. Phone: 206/547-8801.)

Hewlett-Packard Auto Service Bay Diagnostic System (SBDS)

According to Lu Kabir, HP marketing manager for automotive diagnostic systems, Ford Motor Company will begin using this system in the service departments of its auto dealerships in the third quarter of this year. It's designed to interact directly with the on-board computer of the cars it's designed to be worked on with. It also provides on-line inquiry to Ford's OASIS database.

The system uses Microsoft *Windows*, OWL's *Guide* software (a customized extension) and a customized user interface developed with the help of Info Express, Inc. of Los Angeles. It will use an HP Vectra computer equipped with a twenty-megabyte hard disk and CD-ROM drive, storing all the information now on manuals for access by touchscreen.

HP created the text and graphics for this system by scanning the needed information with a HP Jet Scanner. It then transferred and reformatted information from existing databases.

An auto service technician begins his search for information by pushing a "test" button. He can then scroll up or down on the monitor to select the picture of the car he's working on.

Once the mechanic finds the picture of the car desired, he points to the section he's working on. What then appears on the screen is a picture of that portion of the car. By continuing to pinpoint the area that requires detailed information on part breakdown, what appears on screen is a continued breakdown to the basic component level. According to Kabir, this is accomplished using hypertext, a term referring to document-to-document links.

The OASIS presentation allows real-time formatting of retrieved information. The system automatically dials the Ford database in Michigan. It uses on-line browsing, along with structure indexing/retrieval.

The total system cost is estimated to come in under $20,000 including software. Kabir emphasizes that user feedback will be critical in the development process. HP hopes to begin shipping production models in 1988. (Hewlett-Packard Advanced Manufacturing Systems Operation, 11000 Wolfe Road, Cupertino, CA 95014. Phone: 408/553-3633. Or, contact Lu Kabir by phone in Detroit: 313/349-9200.)

Microsoft Bookshelf

Microsoft's Bookshelf is a library of ten useful reference works and tools for writing all on one CD-ROM disk. These references include a dictionary, thesarus, ZIP Code directory, *The 1987 World Almanac and Book Of Facts*, *The Chicago Manual Of Style* and *Bartlett's Familiar Quotations* among others. Microsoft Bookshelf is a memory resident program designed to run in conjunction with fourteen leading word processing programs, including Microsoft's own *Word*.

Bookshelf was designed to appeal to professional writers, editors and journalists; however, Microsoft hopes it will appeal to anyone who generates documents on a personal computer.

Bookshelf requires an IBM personal computer or compatible with 640K memory (512K required for systems with hard disk), MS-DOS 3.1 or 3.2, two double-sided disk drives or one drive and a hard disk, and a CD-ROM disk drive with the Microsoft MS-DOS CD-ROM extensions. Microsoft Bookshelf also requires 256K memory and a double-sided disk drive for standalone use. It is compatible with most leading memory-resident programs.

As a memory-resident program, Bookshelf can run with other programs. Users can access Bookshelf from within a word processor while editing a document and look up information without leaving the keyboard. Users are more likely to take advantage of reference works with Microsoft Bookshelf since it is designed to eliminate having to leave the computer, locate the printed work, and spend time flipping through it at the risk of losing their train of thought. (At this conference, one computer journalist reported that finding an appropriate password to access a particular word in the dictionary took so long, he found it more cost-effective, in terms of time, to merely look it up in a conventional dictionary. But a new program always takes some time getting used to, he allowed.)

The user of Bookshelf can toggle back and forth between the word processing document and Bookshelf, and information about any command is instantly available with on-line, context-sensitive Help. An on-line, computer-based training package is also included.

The references are fully integrated to allow chaining between utilities. For example, the user can start with a single keyword and request synonyms from the thesaurus. He can then change the keyword to one of the synonyms displayed and look up its meaning. The keyword can then be altered as many times as desired without leaving the Microsoft Bookshelf.

Information from reference works can be readily integrated into a document through copy and paste. After each paste, a copyright citation automatically appears within the document.

With a feature called Bookmark, an unlimited number of passages can be marked and recalled later by selecting their names from a Bookmark list. This feature is useful for marking selections most frequently accessed or those the user is considering including in the document. (Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717. Phone: 206/882-8080. Marty Taucher or Kathryn Hinsch.)

The Visual Dictionary

This visual dictionary is a multi-media CD-ROM application produced by Editions Quebec-Amerique-Facts on File, Inc. Five years were spent in its development. It works by presenting pictures with call-outs.

It includes 115 images, 1660 terms in French and English, any of which can be viewed on screen or heard on demand. Additional features include an audio help system, various indices to facilitate theme, word, and picture searching, a software retrieval system with a graphic user in-

TURBO XT MONO SYSTEM

- 4.77/8MHz
- 640K RAM on Motherboard
- Two 360K Floppy Drives
- Hi-Res Monographics Printer Card
- Mono Monitor
- 150W Power Supply

$599

AT COMPATIBLE MONOCHROME SYSTEM

- 6/10 MHz 80286
- 512K RAM Expandable to 1 MB on Motherboard
- 1.2 MB Floppy Disk
- Hi-Res Monographics/Printer Card
- Mono Monitor
- 200 Watt Power Supply

$999

MONITORS

CGA	EGA
$249	$349

SEAGATE

HARD DISK w/Controller

20 MB	30 MB
$299	$349

All Drives Are Brand New and Warranted

1200/300BAUD MODEM HAYES COMPATIBLE with SOFTWARE

$89

DISK DRIVES

TEAC 360KB/1.2 MB	$85/115
FUJITSU 360KB	.75
SEAGATE 20MB/30MB w/Controller	.299/349
APPLE COMP. Disk Drives	.11e $90/11c $99

MOTHERBOARDS

XT 640K Motherboard (0K)	$75
XT Turbo Motherboard (0K)	.80
AT 6/10 MHz Motherboard (0K)	.370

ADD ON BOARDS

Multifunction Card 0K	$79
Monographics Card w/Printer Port	.45
Color Graphic Card w/Printer Port	.45/55

EGA Comp Card	.150
Floppy controller card	.24
Multi I/O Card	.60
Printer Card	.29
RS-232	.39
Monographic and I/O+ Card	.105
Clock Card	.25
Game Card	.20
AT I/O Card	.60
2nd Serial Kit	.15

MONITORS

Amber Monitor (720x348)	$80
DM-14	.125
CTX Color Monitor (14″ Non-glare & RGB/Amber/Green Switchable)	.275
EGA Monitor	.379

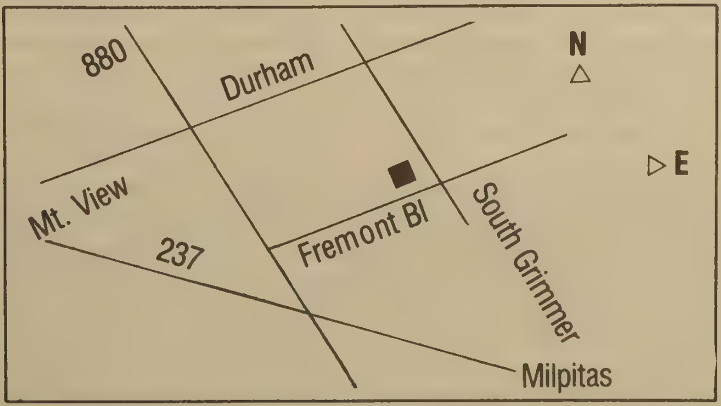
MISC.

Gender Changer	$5
Printer Cable 6′/9′/15′	.5/10/15
6′ RS-232 (MF, F-F, M-M) Cable	.9
XT Slide-In Case	.30
XT (AT lookalike) Case	.40
AT Slide-In Case	.60
External Chassis	.80
Diskette Box (cap 50 pcs)	.4
Joystick	.15
Data Switch Box	.39
Dot Matrix Printer	.199
Power Station (with surge)	.29
Surge Protector (UL Approved)	.12
150W/180W/200W Power Supply	.45/60/75
5150 XT Keyboard	.44
5160 XT (AT-Type) Keyboard	.54
5060 (AT-XT Switchable) Keyboard	.59
Enhanced (AT-XT Switchable) Keyboard	.69
Monitor or TV Swivel Base (12″/14″)	.12/15

We Carry Too Many Items To List Fully
Call For Products Not Listed

Y.E.S. Multinational, Inc.

Dealer Inquiries Welcome
(415) 657-4888 •
44833 Fremont Blvd., Fremont, CA 94539 Mon-Fri 10:00-6:30 • Sat 10:00-5:00
FAX (408) 263-3523



terface, and a companion drill and practice module.

Its storage capacity is 72 megabytes and it is designed to run on the Apple IIe. It takes over an hour to browse through all the pictures on file. A scanning process with a mainframe was utilized to develop the graphics.

Since the dictionary's release last fall, 100,000 copies have been shipped. The project team included seven companies plus the client, the Department of Education. Fact on File and Microtrends were involved, as was Earthview of Seattle, WA, who did the audio portion. (Caroly Kuhn, Software Mart, Inc., Austin, Texas, 7419 Lakewood Drive. Phone: 512/346-7887.)

Laserdrive 1 CD-ROM drive

This laserdrive, designed for IBM PC-compatible systems, will be the first drive to be sold as a package with Microsoft's MS-DOS CD-ROM extensions software and Bookshelf. The retail price of the package is $1,099.

Sears Business Systems Centers, of which there are 100 throughout the country, will carry the CD-ROM drive and software package.

The drive comes equipped with two interface connections which enable users to connect up to four CD-ROM drives in daisychain fashion to access more than one gigabyte of information.

Laserdrive 1 has a headphone jack and volume control on the front panel to effectively utilize audio CD-ROM. It also includes standard stereo jacks for connection to a commercial stereo system for playing standard compact disk audio recordings.

Laserdrive 1 will be available in June. (Jerry Benson, Amdek Corp., 1901 Zanker Rd., San Jose, CA 95112. Phone: 312/364-1180 for Jerry Benson. 408/436-8570 for Amdek's headquarters.)

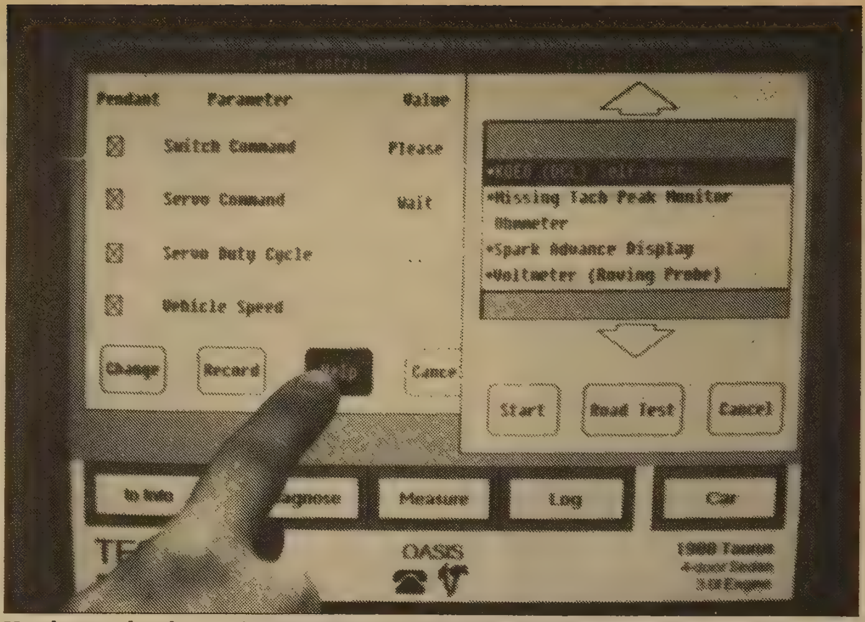
Hitachi CDR-1503S, CDR 2500 and CDR 2500S Disk Drives

Hitachi is doing its part to provide the additional hardware necessary to make CD-ROM a success. The CDR-1503S is a standalone CD-ROM drive that will give personal computers an on-line memory capacity of 552 megabytes.

An audio output is provided as standard to make the drive more adaptable to uses in education and training where commentary is often provided on the CD-ROM with data. And an interface card is available for IBM PC/AT/XT models, allowing connection to the CD-ROM drive by plugging into the personal computer expansion slot.

The CDR 2500 and 2500S are new additions — the 2500 is designed to be incorporated in a personal computer, while the 2500S is a standalone drive with its own power supply to be connected as an external component.

Two interface cards are available for the 2500 and the 2500S — the CD-IF25A for connection to the IBM PC/AT and the CD-IF25A-2 for connection to the IBM PC/AT/XT. An audio card is optional for these two drives, and output jacks are provided on the front panel for the connection of headphones or an amplifier.



Hewlett-Packard's Service Bay Diagnostic System uses touchscreen monitors, CD-ROM and a hypertext information retrieval system to provide complete reference and help for Ford auto mechanics.

One of the really neat things about these Hitachi drives is that in the case of the 2500 and the 2500S up to four drives can be connected in daisychain fashion. (Hitachi Sales Corporation of America, 401 West Artesia Blvd., Compton, CA 90220. Phone: 213/537-8383. And there's an office in Santa Clara (OEM/Industrial Division), 1333 Lawrence Expressway, Suite 118, Santa Clara, CA 95051. Phone: 408/249-1821.)

Kwikee INHOUSE Graphic Services

Multi-Ad Services announced the first syndicated electronic art service on CD-ROM — Kwikee INHOUSE Graphic Services. It is due for distribution in May.

INHOUSE Graphic Services consists of four segments: INHOUSE Art Department — CD-ROM disks containing high quality vectored line art completely machine independent; INHOUSE Layout Department, specialized software for page and ad layouts; INHOUSE Communications Link — allows a user to obtain specialized art needs; and INHOUSE Monthly, a newsletter containing a complete index, training and support, layout ideas, news features and industry stories.

Subscribers to INHOUSE receive continual software updating and enhancement. The retrieval mechanism for INHOUSE software was developed through a long term co-development program between Multi-Ad and Odesta Corporation, using Odesta's first Helix CD-ROM applications.

The software is designed for use with an Apple Macintosh Plus computer. (Multi-Ad Services' Western office: 17885 Sky Park North, Suite F, Irvine, CA 92714. Phone: 714/250-1222. Or, contact Roy M. Endres at 309/692-1530, 1720 West Detweiller Drive, Peoria, IL 61615-1695.)

LoDOWN CD-ROM Development System

LoDOWN is now selling a complete CD-ROM development system for micro computer users. This system consists of a high capacity 155 or 234 megabyte hard disk, the LoDOWN 400 or 800 megabyte W.O.R.M. (Write Once Read Many) optical drive and a CD-ROM drive.

This system will, for the first time, allow users to bypass the expense of mainframe computers and the IBM compatible nine track 6,250 BPI tapes.

CD-ROM data is created on the large hard disk and then recorded on the optical W.O.R.M. drive, where the user can verify data from the W.O.R.M. cartridge. The compact disk will appear and operate in the same identical fashion as the W.O.R.M. cartridge.

Previously, conventional methods for preparing data for premastering a compact disk was to generate an IBM compatible nine track tape without any assurance of its intended goals. The LoDOWN W.O.R.M. cartridge is to the PROM (Program Read Only Memory) component as the compact disk is to the ROM (Read Only Memory) component.

When the W.O.R.M. cartridge is configured as desired, it's sent to LoDOWN where the CD-ROM disk is premastered. Turnaround time to premaster and receive the production compact disks can be as short as 24 hours. Costs to premaster start at $1,800 for 100 megabytes of data.

LoDOWN also offers the production compact disk with prices ranging from eight to 18 dollars, depending on quality. This compact disk stores 600 megabytes of digital data, 70 minutes of audio or a combination of both digital data and audio.

The LoDOWN CD-ROM drive connects to a micro via the ultra high speed SCSI bus. The LoDOWN CD-ROM Development System supports the Apple family of Macintosh computers. The CD-ROM drive will have the option under program control to direct the output as either digital data or audio. With the option of audio output, the LoDOWN is well suited for the education, training and courseware development market. The end user price for the LoDOWN CD-ROM is $1,595.

LoDOWN's CD-ROM Development System is available with prices starting at $11,595 for the complete system. (Robert Lindgren, LoDOWN, 10 Victor Square, Suite 600, Scotts Valley, CA 95066. Phone: 408/438-7400.)

KnowledgeSet Retrieval System

KnowledgeSet now has available a fully graphics-capable version of its retrieval system. The original Text Knowledge Retrieval System is designed for text-only CD-ROM. This new Graphic Knowledge Retrieval System is specifically designed to access databases that combine both text and graphics. Bit-map and vector graphic image support make the Graphic KRS ideal for databases that contain sophisticated technical drawings, schematics, charts, graphs and photos.

KnowledgeSet is perhaps best known for having contributed the retrieval software for the CD-ROM version of Grolier's 20-volume Academic American Encyclopedia. Now KnowledgeSet and Pergamon InfoLine of London, England have announced the development of a new information retrieval system for the chemical industry. This Integrated Chemical System (ICRS), a joint venture between KnowledgeSet and Hampden Data Services (a subsidiary of Pergamon), enables a user to search and retrieve specific graphic image information in chemical structure drawings as well as text information from chemical databases.

Work has begun to make the prototype ICRS available for evaluation in the spring of this year.

The Graphic KRS currently exists for micro users that use GEM graphics environment software from Digital Research. It will also become available for other graphics systems such as Microsoft *Windows*.

The screen display features drop down menus and graphic "buttons" selectable with a mouse. Images and text are displayed in separate windows. Thus, article text and accompanying pictures can be viewed on screen simultaneously or individually.

Advanced features of this Graphic KRS include dynamic cross-references (hot-links) for direct access to cross-referenced articles from within the text of an article, bookmarks, graphic zooming and panning capabilities and a series of database navigational tools such as citation, reference and expert view listings.

For a small fee, KnowledgeSet offers a complete videotaped demonstration for parties interested in these systems. (Gail Bower, Product Marketing Manager, KnowledgeSet Corp., 60 Garden Court, Bldg. A-3rd Floor West, Monterey, CA 93940. Phone: 408/375-0401.) ☐

TOKYO ELECTROLAND

FULL SALES & SERVICE OF ALL COMPUTERS

Now Open Sundays 12-5

IBM AT COMPATIBLE SYSTEM

From $799

IBM Compatible PC/XT
640K, 1 Drive, Display Card
Only $499

IBM PC/XT Compatible
2 Drives, 640K
$589

IBM PC AT COMPATIBLE 80386 . . . . $2750

Any system or systems tailored to your needs!

IBM PC/XT
1 Drive
256K
$950

IBM PC System 2 . . . . $Call

SONY 20″ TV SPECIAL

Stereo/ Remote Only
$528
Reg. $849

MAY EPSON® PRINTER SPECIALS

FX 86E 286E

- Select type IV font panels allow ease of use into NLQ mode
- 9 pin 240 cps draft/60 cps NLQ
- Standard friction & pull tractor feeds

LQ 800 1000

- Speed & letter quality output are yours with this 136 col. or 80 col. 24 pin dot matrix printer
- Prints 180 cps in draft mode; or 60 cps in LQ mode
- Front panel fingertip selection of letter quality or draft mode

EX 800 1000

- Prints 300 cps print head speed in draft mode (Elite 12 cps)
- 60 cps print head speed in NLQ mode
- Automatic sheet load easily and quickly inserts single sheets of paper
- 8K internal buffer stores up to 4 pages of data at a time

FX 86E	$315
FX 286E	$445
LQ 800	$435
LQ 1000	$595
EX 800	$389
EX 1000	$499

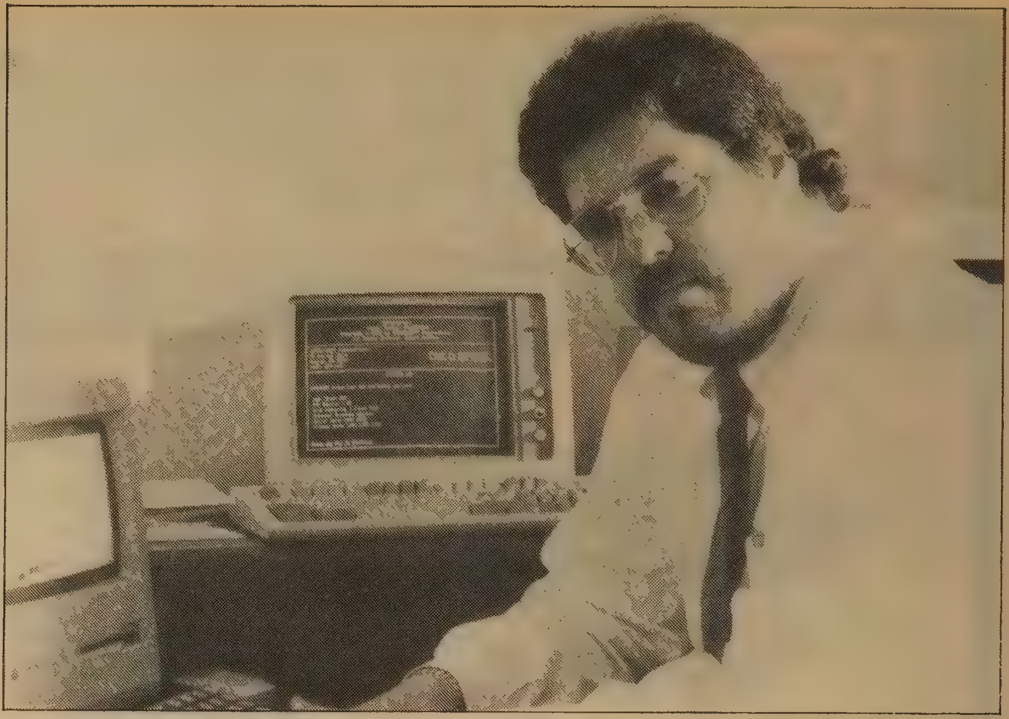
650 Mission Street
(At New Montgomery)
San Francisco

Store Hours
Mon-Fri 9:30-6:30
Sat 10:00-5:00
Sun. 12:00 - 5:00

Above prices cash only. Add 3% M/C & Visa

(415) 777-2100

Bruce Bierman of Intellisoft,
who prefers software that performs
a few tasks very well to programs
with a plethora of esoteric features.



BOOKMARK:

First In A Series Of Intelligent Software

By Martha Conway

Bookmark is an innovative data protection system retailing at $69.95, currently available for the PC only (with a Mac version on the way) and created by Intellisoft International in Novato, California. *Bookmark* insures against losing data due to an accidental power failure or an untimely shut down by routinely saving your work while in process. Intellisoft and Bookmark were created almost simultaneously in 1986 by Bruce Bierman with the intention, according to Bierman, of producing "Intelligent software from intelligent minds."

Bierman's past achievements in the industry lend credence to the claim. Coming into the computer business in the mid 1970s, Bierman soon established ComCal Corporation, an IBM Value Added Dealership with Autopoll, an automated diagnostics service center for telecommunication companies. In addition, he has worked as a chief counter-surveillance engineer for a renowned private investigator with an expertise in computer security (which might account for the fact that *Bookmark* includes a password option).

Bookmark, the company's first product, lives up to the "intelligent software" label. It is a basic software program which does a few things very well. Intellisoft prides itself on straightforward, easy-to-understand software. Bierman believes that "it's more important that you get more benefits than features. If a program has a hundred features but only two benefits, then I don't think it's a very effective program. We want to be benefit oriented, not feature oriented."

Because of this ideal, *Bookmark* is not simply user friendly, it's *new* user friendly as well. It eliminates the biggest fear the computer newcomer has — losing data. As it's loaded, *Bookmark* also tells the user exactly what system the machine is working on, which is also an advantage if you are just trying to learn. In addition, it eliminates menu selection and the time-consuming and often tedious task of teaching novices file entry commands. Intellisoft wants users to get into their program as quickly and painlessly as possible, and for this reason *Bookmark* has essentially two features: saving your place and saving your data. That's all. No sideline gimmicks, no slick and tricky features.

However, this apparent simplicity wasn't easy to achieve. Bierman has said that, "We've been working on it for a very very long time, and its been difficult to make it operate ....It's a lot more complicated than meets the eye." *Bookmark* performs exactly what its name implies: it saves your place by remembering where you left off. It works by taking a "snapshot" of your data every few minutes or keystrokes, whichever the user decides upon, and sends it to a reserved area of your hard disk. (Default setting saves memory every two minutes or 1000 keystrokes, whichever comes first.) This snapshot consists of not only the file currently being worked on, but the entire system and video RAM.

As might be expected, it is not so easy to take a picture, which is really making a copy, of an entire system when it is in the middle of operating. According to Bierman, "When you take that image and you put it somewhere and then you want to put it back, it's very easy to take the picture but sometimes it's not as easy to put the image back and reinstate everything just the way it was." The way Bierman managed it was by freezing the system at a certain point in order to copy and replace. Although this sounds time-consuming, it really isn't — it normally takes only two to ten seconds to unfreeze, "About the time it takes to look back at the page you are typing," Bierman says.

Compatibility is sometimes a problem because, in order to take a picture, *Bookmark* has to identify and understand the system it is working on. "It's an intricate type of software concept," remarks Bierman, "because it's much more hardware dependent than it is dependent on operating on other PC software. In fact it's probably more compatible with other software ...[and] less compatible with hardware than other software is." Wise 286 and Kaypro 286 are not compatible, for example, but the XT models of both are compatible. Says Bierman, "It's basically a matter of BIOS dependency .... Any computer than has Phoenix BIOS will be compatible with *Bookmark*."

Intellisoft's Bierman: "If a program has a hundred features but only two benefits, then I don't think it's a very effective program. We want to be benefit oriented, not feature oriented."

Although *Bookmark*'s first release was in the DOS world because of its large user base, versions are being planned for the Macintosh and other machines. Says Bierman, "We start from where we feel the largest market share is in installed equipment and additionally try to get *Bookmark* in on some of the newest pieces of equipment being designed."

Some have taken issue with the fact that *Bookmark* is copy-protected. Bierman points out that the European market, which currently comprises 70% of Intellisoft's business, favors copy-protection. However, he adds that the copy-protection decision was made as a short-term strategy in order to insure *Bookmark*'s growth into a larger installed base. The present version will be able to be updated to a new, non copy-protected version, but there will also be a $30 difference in price.

The new release should be available in May. The current version requires IBM DOS 2.1 or higher (also compatible with IBM's new DOS 3.3), one floppy disk drive; a hard disk of 10 megabytes minimum, and an IBM, AST or Hercules video display adapter. And as to future products? Bierman sees them as following the same general principles as *Bookmark:* simple, effective and inexpensive software. (Intellisoft, 51 Digital Drive, PO Box 5055, Novato, CA 94948, 415/883-1188.) ☐

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

FRY'S ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770

★ YOU'RE IN THE CHIPS AT FRY'S ★

256K-150
$2.89
120 N.S. $3.89
100 N.S. $4.99

64K-150
$1.19
120 N.S. $1.69

6.8 VOLT LITHIUM BATTERY $9.99
IBM AT

2754 or 2764A
8K x 8 EPROM $3.59
200 N.S. . . $3.99

intel MATH COPROCESSOR

PC/XT 8087		AT 80287
$99.95	5/6 MHz	$188
$159	8 MHz	$299
$199	10 MHz	$399

HM51258 P10
FOR COMPAQ 386 $6.99

3 VOLT LITHIUM BATTERY
$1.99

LITHIUM BATTERY HOLDER
$1.29

E² EPROM
2816A-300 . . $8.99
2864A-250 $14.95

DISK DRIVE MOUNTING RAIL W/HARDWARE
COMPAQ RAILS. . $4.99
AT RAILS $2.99

NULL MODEM
M-F $6.99

27256A-250
32K x 8 EPROM
$4.99
200 N.S. . . $5.99

16 MHz
QUARTZ CLOCK
69¢

TI-3/4 LED'S
Red-Grn-Yellow
10/$1

27128-250
8 x 16K EPROM
$3.99
200 N.S. . . $5.99
150 N.S. . . $7.99

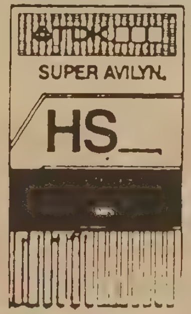
8 FT. KEYBOARD CABLE
IBM and Compatibles $8.99

1987 IC MASTER
DELUXE EDITION $124.95

RS232 GENDER CHANGER
DB25
Male-Male
Female-Female $8.99

★ FRY'S WONDERFUL WORLD OF VIDEO ★

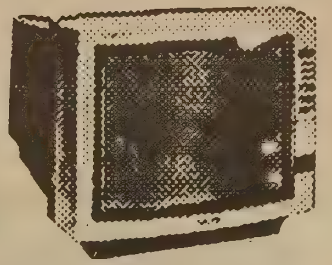
TDK
T-120
VHS VIDEO TAPE



$2.88 * each

Purchase 4 TDK T-120 HS for $3.63 each and receive a $3 Rebate from TDK

SONY. 13" REMOTE CONTROL COLOR TV/RGB MONITOR.



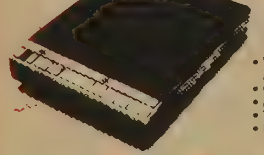
- Microblack Trinitron Picture Tube
- On Screen Display
- Sleep Timer

Model 1311

With FREE IBM PC interface Cable

$388

PANASONIC PHONE ANSWERING MACHINE



- Voice Activated or 1 Minute Message Length
- Call Monitoring
- Message Memo
- Tone Remote Control System
- Dual Standard Cassette

$69
Model 1421

FREE NINTENDO GAME PAK.

Now You Can Buy the NINTENDO Entertainment System Control Deck and Get A Super Mario Bros. Game Pack Free.

Comes complete with Nintendo Control Deck, two Game Controllers and a bonus Nintendo Game Pak — Super Mario Bros. The most spellbinding adventure ever created.

$79.95

SAMSUNG VIDEO CASSETTE PLAYER 3-SPEED

$149

MAGNAVOX HQ VHS VCR WIRELESS REMOTE CABLE READY

- 14 Day/2 Event Programmable Timer
- Special Effects
- One Touch Record
- 8 Hrs. Recording Time

Model 9512

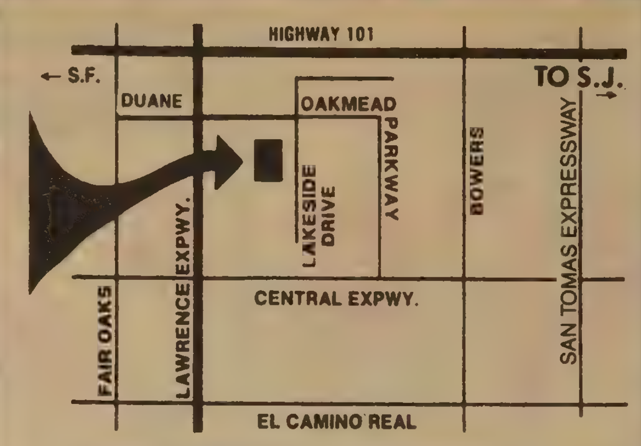
$229

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

Fry's ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770



Prices Good Through June 16

HOURS:
Mon.— Fri.
8 am-8 pm,
Sat. 9-6,
Sun. 10-6

VISA,
MASTERCARD
WELCOME
Limit Rights Reserved

OEI XT MONO SYSTEM

Office Equipment International

IBM XT COMPATIBLE MONO SYSTEM

- 256K RAM expandable to 640K on Motherboard
- 1 ½ Ht Floppy Disk Drive
- Hi Res Monographics Printer Card
- Mono Monitor

$499

IBM PERSONAL SYSTEM 2 MODEL 30

- 8 MHz 8086
- 640K RAM
- 2-3½" 720K Floppy Disk Drives
- 3 Expansion Slots
- Runs PC DOS 3.3

$1395

ATARI® 520ST

MONOCHROME SYSTEM

- 512K RAM
- TOS in ROM
- 8MHz MC68000
- 3½" SS/DD Floppy Disk Drive
- Serial/Parallel Ports
- TV Hookup
- Hi-Res Monochrome Monitor

1 Year Extended Warranty

$449

ATARI® 1040ST

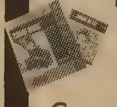
COLOR SYSTEM

- 1 MB RAM
- 8MHz MC68000
- Built-In 3½" DS/DD Floppy
- Serial/Parallel Ports
- Hi-Res Color Graphics Monitor

1 Year Extended Warranty

$949

BORLAND



TURBO BASIC

Complete development environment. Includes interactive editor & notes.

$\$64^{95}$

TURBO C

Compiles 7000 lines per minute. Easy to use. Full screens & automatic error tracking

$\$69^{95}$

ATARI® SH204

20 MB HARD DISK
for 520ST or 1040ST

$588

COMPAQ® DESKPRO 286

- 80286
- 1.2MB Floppy Disk
- 256K RAM expandable to 2MB On Board
- Serial/Parallel Ports
- Clock
- Calendar

NEW! 12 MHz

$1995

Seagate

20 MB Hard Disk Kit
with Controller, Cables & Software

$319

EVEREX 300/1200 BAUD MODEM

HAYES COMPATIBLE
½ Card w/FREE Bitcom Software

$\$89^{95}$

PRINTERS

EPSON EX-800	$439
EPSON EX-1000	589
EPSON DX-35 Daisy Wheel	469
EPSON LQ-800	489
CITIZEN 120D	189
IBM PROPRINTER	399
IBM PROPRINTER XL	599
NEC P6 PINWRITER	488
NEC P7 PINWRITER	669
TOSHIBA P321	499
OKIDATA 292E w/MODULE	599
OKIDATA 293E w/MODULE	699
OKIMATE 20 COLOR	199

IBM MULTIFUNCTION

AST RAMPAGE PC 256K	$249
AST RAMPAGE AT 512K	469
THK MULTIFUNCTION	89
AST 6 PAK PREMIUM	289
½ CARD MULTI I/O XT or AT	69
AST ADVANTAGE PREMIUM	499
DFI AT MULTIFUNCTION	249
JRAM 3 PC (Lotus-Intel)	199
JRAM AT3 (Lotus-Intel)	269
DFI MEMO 2000 AT (Lotus-Intel)	199
INTEL ABOVEBOARD PC	229
INTEL ABOVEBOARD AT PS	429
INTEL ABOVEBOARD PCPS	269
DFI MEMO 2000(Lotus/Intel) PC	119

MODEMS

HAYES 1200B INTERNAL	$299
HAYES 1200 EXTERNAL	399
HAYES 2400 EXTERNAL	598
HAYES 2400B INTERNAL	599
EVEREX EVERCOM ½ card Hayes 1200B Compat. w/Bitcom	89^{95}
EVEREX EVERCOM III ½ Card Hayes 2400B Compatible	199
AVATEX 1200hc Hayes Compat External	129
MIGENT 1200 External Pocket Modem	149

MONITORS

AMDEK 410 A or G	$169
AMDEK COLOR 600	349
AMDEK COLOR 722 EGA	469
AMDEK COLOR 730 PGA	599
AMDEK COLOR 725 AT&T RGB	549
MAGNAVOX COLOR 562 RGB 80	279
QUIMAX DM 14 MONO	139
IBM MONO	249
IBM ENHANCED COLOR	699
SONY MULTISCAN 1302 EGA/PGA	649
SONY 1311 TV/RGB	388
NEC MULTISYNC EGA/PGA	599
PRINCETON MAX 12E	179
PRINCETON HX 12E	599
PRINCETON HX12	479
MITSUBISHI EGA	399

DRIVES

MAC 800K FLOPPY	$229
FUJITSU GREY 5¼" AT	89^{95}
MITSUBISHI 5¼" 360K	74^{95}
TEAC 5¼" 55BV	99^{95}
SEAGATE 30MB KIT w/Controller	379
SEAGATE 30 MB AT HARD DISK	599
SEAGATE 40 MB AT HARD DISK	699
SEAGATE 82 MB ST1096 AT	1099
RODIME 30 MB AT HARD DISK	499
RODIME 40 MB AT HARD DISK	629
W. DIGITAL 20 MB FILE CARD	595
PLUS 20 MB HARD CARD	749
MOUNTAIN 30 MB CARD	699
MICROPOLIS 40MB (30MS AT Drive)	749
120 MB AT DRIVE	1695
72 MB AT DRIVE	999

COME JOIN OUR ANNIVERSARY SALE • A • BRATION!

JS 286 AT MONO SYSTEM

IBM COMPATIBLE AT MONO SYSTEM

- 8MHz 80286
- 1.2 MB Floppy Disk
- 512K RAM Expandable to 1MB on Motherboard
- Hi-Res Monographics Printer Card
- Mono Monitor

\$1249

APPLE MACINTOSH PLUS

- 1 MB RAM
- 3½″ 800K Floppy Disk
- Expansion Slot
- Serial Port/SCSI
- Mouse
- Apple Keyboard

\$1595

INTERNATIONAL

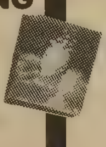
TURBO CHARGE YOUR PROGRAMMING

TURBO PASCAL

The fastest Pascal compiler, plus an integrated programming environment.

$^{\$}59^{95}$

TURBO PROLOG



The natural language of artificial Intelligence. Takes programming to a new dimension.

$^{\$}69^{95}$

APPLE IIgs

FAST!
GREAT SOUND & GRAPHICS!
IIe & IIc Compatible

- System Unit
- 3½″ DS/DD Floppy Disk
- 5¼″ Floppy Disk
- Hi-Resolution Analog RGB Color Monitor

\$1895

3M 5¼″ DS/DD DISKETTES

Box of 10

FREEVIEWS
In Every Box!

Trial use software programs include:
Dr. Halo II • Polywindows
• Desk Plus • Whoops!
• Menu Master • Chess 7.1
• Smart Notes • Electric Webster

$^{\$}8^{88}$

intel INBOARD 386/AT

Take Your AT to the Limit! 16 MHz 80386 with High Speed Cache. For IBM AT & Compatibles. Includes Cable.

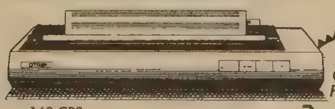
\$1595

APPLE IMAGEWRITER II

• 80 Col • Platinum Edition
• 160 CPS Draft •
25 CPS NLQ

\$469

CITIZEN™ MSP-10



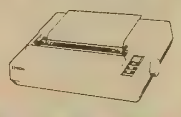
FREE Printer Cable, Paper & Font Software!

- 160 CPS Draft
- 32 CPS NLQ
- 80 Columns
- Built in Tractor Feed
- Epson/IBM Compatibility
- 18 Month Warranty

\$299

EPSON® EX-800

- 80 col
- 300 CPS Draft
- 65 CPS NLQ
- 1 Yr Warranty
- Color Option



\$439

ACCESSORIES

MAXELL HIGH DENSITY 5¼″ DISKETTES	$^{\$}21^{95}$
3M HI DENSITY DISKETTES FOR AT	19^{95}
3M 3½″ DISKETTES SSDD	12^{95}
MAXELL 3½″ DISKETTES DSDD	18^{95}
SONY 3½″ 1D SS/DD	13^{49}
SONY 3½″ 2D DS/DD	19^{95}
IBM PC PRINTER CABLE 12 FT.	19^{95}
6 PLUG SURGE SUPPRESSOR	16^{95}
DISK FILE 60 3½″/5¼″	9^{95}
IBM PC PRINTER CABLE 6 FT.	6^{95}
PRINTER PAPER CLEAN PERF. 9½ × 11 2500 SHEETS	18^{95}
PRINTER PAPER GREEN BAR 14⅞ × 11	29^{95}
PRINTER PAPER 9½ × 11 3000 SHEETS	21^{95}

IBM HARDWARE

EVEREX EDGE	$^{\$}249$
IBM ENHANCED GR	479
IBM ENH. MEMORY	179
VIDEO 7 VEGA EGA	299
VIDEO 7 VEGA DELUXE	349
EVEREX MICROENHANCER EGA	179
COMPUSTAR COLOR	89
HERCULES GRAPHICS PLUS	199
HERCULES COLOR	159
COMPUSTAR HERCULES COMPAT MONOGRAPHICS	69
EVEREX EXCELARATOR TURBO 286	309
TINY TURBO 286	439
ORCHID TURBO 286E	799

IBM SOFTWARE

WORDPERFECT 4.1	$^{\$}219$
JET	32^{95}
LOTUS 123 REL 2	309
TURBO PASCAL 3.0	59^{95}
TURBO TOOLBOX	39^{95}
TURBO TUTOR	24^{95}
PFS: FIRST CHOICE	129^{95}
PFS: PROFESSIONAL WRITE	129^{95}
PFS: PROFESSIONAL FILE	149^{95}
ZORK 1	29^{97}
MICROSOFT QUICKBASIC	79^{95}
COPY II PC	19^{95}
DBASE III PLUS	399
REFLEX V. 1.01	95^{95}
FAST PAK MAIL	54^{95}
MICROSOFT WINDOWS	64^{95}
XTREE	34^{95}
HOT!	49^{95}
MANAGING YOUR MONEY	119^{95}

MAC SPECIALS

MACINTOSH SE w/APL Keyboard 2-3½″ FDD/1MB RAM	$^{\$}2699$
DATAFRAME 20MB XP	929
RELAX MACMATE 20MB	699
RELAX MAC PLUS 20MB	799
APPLE LASERWRITER	3995
512K UPGRADE MACSNAP	169
MACSNAP 2 MB UPGRADE	389
MOUSE HOUSE	6^{95}
MOUSE MAT	9^{95}
MAC CARRYING BAG	89^{95}
COPY II MAC	23^{95}
SPEED MAT	14^{99}
FULL PAINT	99^{95}
MAC TILT N′ SWIVEL	19^{95}
MAC 800K FLOPPY	229
APPLE 20MB HARD	999

APPLE SPECIALS

APPLE IIe/128K	$^{\$}699$
MAPLE IIc/IIe FLOPPY	99^{95}
80 COLUMN/64K	49^{95}
VIDEO 7 COLOR ENHANCER	139^{95}
GRAPPLER PRO	79^{95}
APPLE 80 COL/64K	89^{95}
APPLE SUPER SERIAL	99^{95}
CA SERIAL CARD	49^{95}
APPLEWORKS	179
FULL PAINT	99^{95}
COMPOSITE MONITOR	79^{95}
SMT SERIAL CARD	69^{95}
SMT PARALLEL GRAPHICS	69^{95}

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

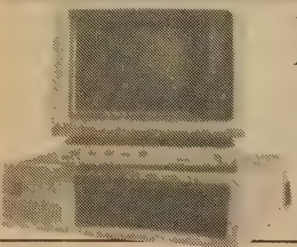
Fry's ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770

KENSINGTON™
The Innovative Accessory Company

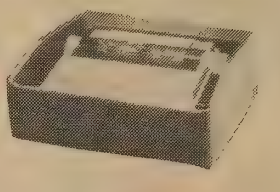
PC Accessories



MasterPiece®

Combines the five popular PC accessories in one elegant unit:
Two Stage Surge Suppression
RFI & EMI Noise Filtering
Static Protection
Five Individually Switched Outlets
Monitor Swivel

$99 95



Printer Muffler™

Reduces the noise from your printer by 75% to 85%! Keeps noise in/dust out! Bottom slot w/back cutouts for cables

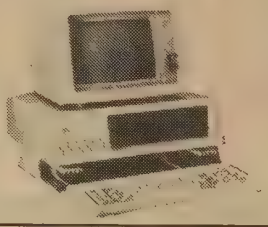
Printer Muffler 132 ....$69 95

$49 95

MasterPiece® Plus

Especially for modem users, Master Piece Plus has additional modem/telephone surge suppression circuitry to protect your valuable modem and data from the electrical disturbances that occur on the telephone line.

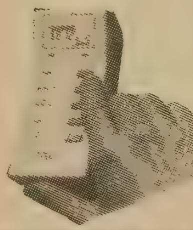
$119 95



Keyboard Slideaway

Extends your workspace forward by 8″ to give you plenty of room for your keyboard. Slides away easily and conveniently under your PC when not in use.

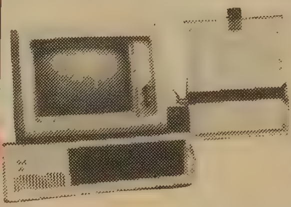
$39 95



Master Piece® Remote

Master Piece Remote comes in two separate parts—perfect for PC users who are short on space. Its Outlet Strip hides behind your desk, while its Remote Control keeps your switches in easy reach.

$149 95

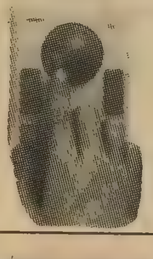


Universal Copy Stand

A sturdy stand (molded from ABS plastic) is fully adjustable in all directions. Attaches easily to the side of any monitor with adhesive included. No tools needed.

$21 95

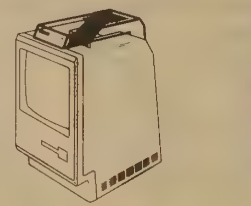
Maccessories®



Turbo Mouse™

Twice the speed of a standard mouse—in ½ the space. You move only the mouse ball, not the whole mouse. Turbo mouse is also sensitive to speed. Compatible with all Macintosh models, the Apple IIe & IIc.

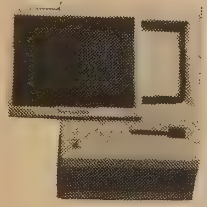
$99 95



System Saver® Mac

All-in-one accessory that gives your Macintosh™ a quiet cooling fan, essential surge suppression, noise-filtering, two extra outlets, and a convenient single or double power switch option.

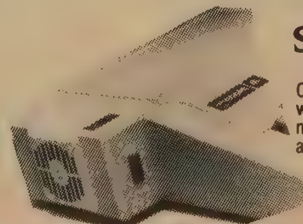
$69 95



Circular Polarizing Filter

Reduces reflected screen glare by up to 99%, while improving screen contrast and clarity. No tools needed.

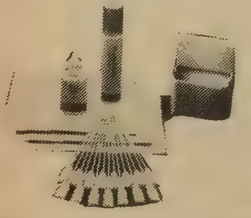
$39 95



System Saver® Apple

One front-mounted switch powers your whole system. Surge suppression and noise filtering protects your Apple, and a quiet fan keeps it cool.

$64 95



Mouse Cleaning Kit with Mouse Pocket

Contains non-abrasive foam swabs, lint-free cleaning cloths, cleaning solution, compressed air.

$18 95

Universal Printer Stand

Sturdy metal stand fits all popular dot matrix printers, short carriage or wide, including the ImageWriter II. Raises your printer 1½″ at the front and 4½″ at the back for easy monitoring and convenient paper storage underneath.

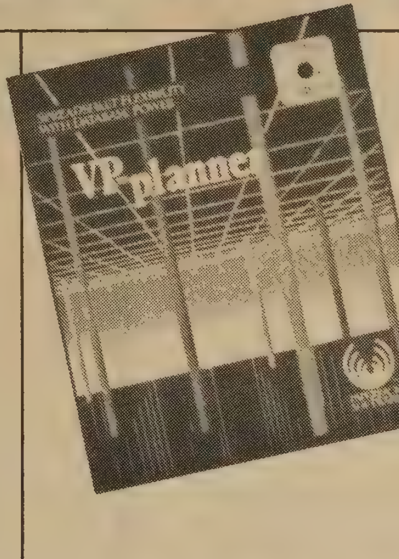
$16 95

Very Powerful . . .
Very Productive . . .

VP - EXPERT

Expert System Development Tool VP-EXPERT uses straightforward "IF-THEN-ELSE" rules to define specific knowledge & responses. Artificial intelligence at its best!

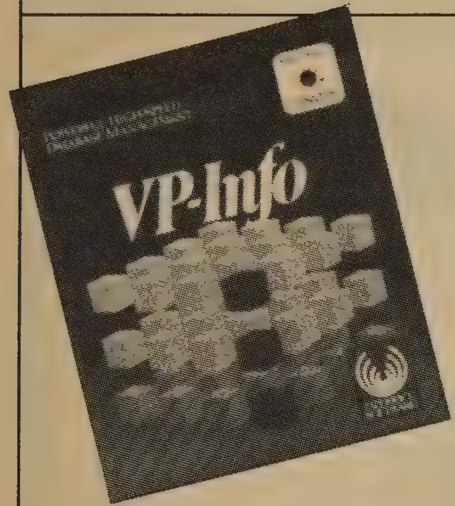
$59⁹⁵



VP-Planner®

The best-selling spreadsheet program that features much more than just compatibility with Lotus® 1-2-3 Release 1A. VP-Planner can read, write, create, edit and join dBASE® and VP-Info database files directly through a worksheet. And VP-Planner's unique Multidimensional Database feature can quickly and easily analyze up to five dimensions of data using familiar two dimensional worksheets.

$59⁹⁵



VP-Info™

New from Paperback Software!
A Powerful database program that includes a built-in compiler for lightning fast program execution, record and file locking for multi-user support, and compatibility with dBASE II®, III and III Plus data files. Non-copy-protected diskette and low-cost runtime version available.

$59⁹⁵

VP - GRAPHICS

NEW!

High powered drawing, charting & presentation graphics program. VP-GRAPHICS can use external data for graphs from several file types, or you can plug in your own data with the built-in "mini-spreadsheet." Versatile, flexible, powerful, a snap to learn & use!

$59⁹⁵

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

Fry's ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770

PAPERBACK
SOFTWARE
®

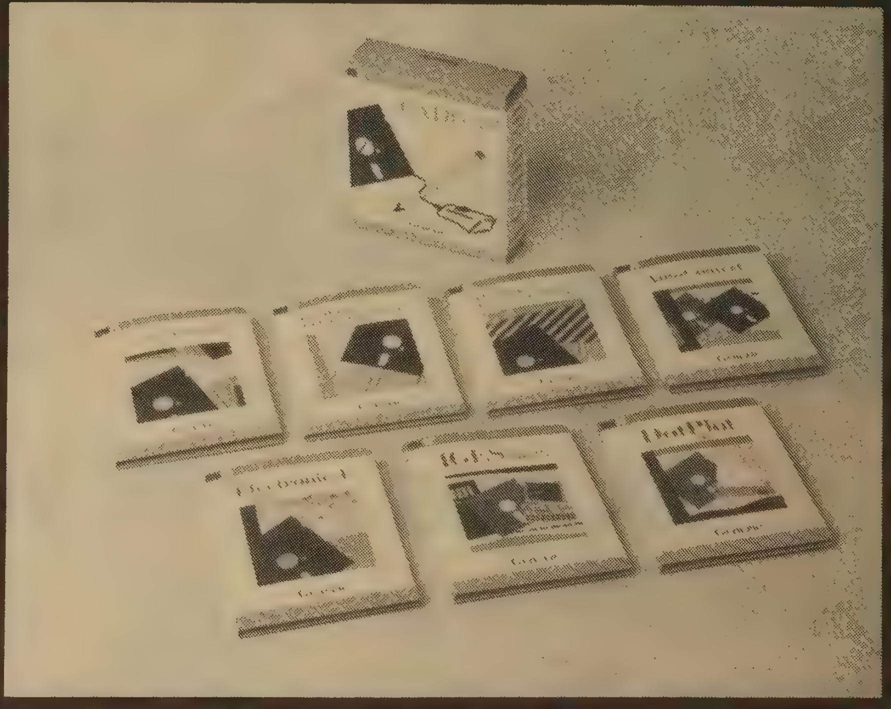
HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

Fry's ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770

Generic
SOFTWARE



Generic CADD 3.0
is an indispensable tool for any business that requires drawing or combining text with graphics. On-screen menus let you master Generic CADD 3.0 so you can get down to business immediately! Draw flow charts, graphs, floor plans, forms & other business graphics.

$64.95

Add other modules to extend the power:

AUTO DIMENSIONING
Additional menu to speed up dimensioning in drafting **$28.95**

DRAFTING ENHANCEMENTS-I
Allows for snaps, trims, filleting, chamfering, double mode, & increased speed **$28.95**

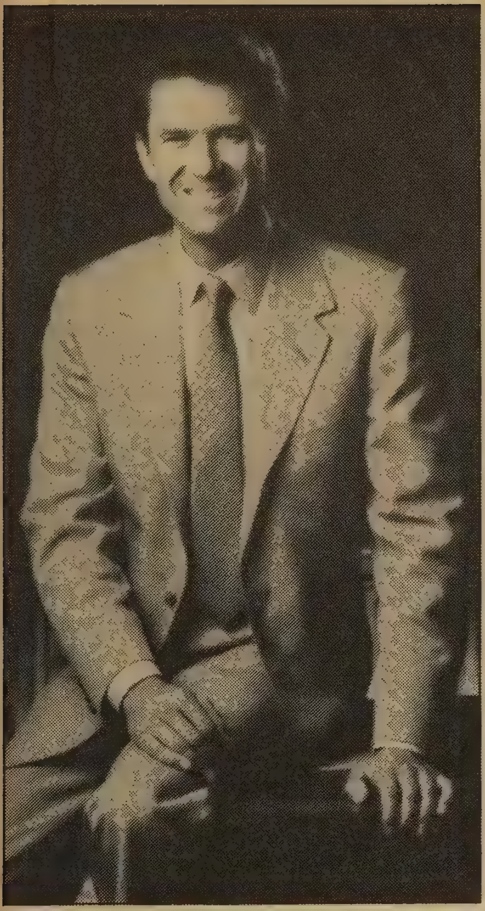
DRAFTING ENHANCEMENTS-2
Area fill and line type fill **$28.95**

IGES
Allows you to exchange drawings with minis & mainframes **$149.95**

AUTO CONVERT
Allows you to exchange drawings with other CAD package **$28.95**

DOT PLOT
Allows over 100 Dot Matrix Printers to plot out graphics **$28.95**

ELECTRONICS-I
IEEE standard code predefined symbols, elements, transistors, resistors, bipolars, etc. **$28.95**



President David Kay of Kaypro: "We've had one rough time — the transition from CP/M to IBM compatible. Most analysts agree that we're the only company that has made the transition."

Kaypro Enters The 386 Era

By Robert Beauchamp

In 1982 Kaypro, founded by David Kay's father Andrew, left the digital instrument business to make its first computer. The portable Kaypro went head to head with Adam Osborne's portable; Kaypro prospered, Osborne Computer eventually went bankrupt. But while the industry was switching over to the IBM PC/MS-DOS standard, Kaypro lagged behind with its CP/M machines and sales fell.

About a year ago, however, things turned around for Kaypro (see "Kaypro Fights Back," February 1986), and Kaypro's fortunes have been on the upswing ever since. Recently at the West Coast Computer Faire we caught up with David Kay to see what was new with the so-called "roller coaster company." While we were there, who should stroll into the Kaypro booth and shake hands with Kay but Adam Osborne himself! (According to Kaypro public relations representative Michelle Breyer, Osborne and Kay are working on a deal to bundle Paperback Software products with Kaypro computers.)

Whatever these old nemeses may be up to, they're probably enjoying this particular portion of the roller coaster ride.

So, this has been quite a year for Kaypro.
It certainly has. We've turned some corners and have established ourselves as the premier supplier of desktop 8088 machines. With the most features for the dollar and the best quality out there, I think we're doing it the right way.

You have a new machine based on the 80386 microprocessor.
That's right; we're the only company besides Compaq that I know is actually shipping.

Isn't it risky to ship out 386s before IBM does?
No, because I think that there is such a tremendous market inertia for the software that's been written. People want to run it faster and they want to run it on a bigger, more multi-faceted machine. The software is going to continue to be written around the DOS that's already existing. IBM, if they do it right, will come out with an open architecture 386 that's downward and upward compatible. But they may not do that, in which case it will be a year before any software is written. So it won't really affect the market too much. That's my view, but I guess we'll find out April 2nd.

The best thing that could happen for the industry, of course, is for IBM to get out there with its 386 and establish a standard. Then everyone can charge ahead and get new software, get a new generation of machines and a whole new marketplace opened up with expert systems software. But until it comes out with the hardware, there's not going to be a DOS. And without the DOS you can't run applications.

Do you think there is going to be some kind of new standard? Might IBM just bypass the 386 entirely?
They could, you never know. It's unlikely. I think IBM sees its market share has been dwindling because it hasn't kept up the features on its products. I think it sees that it is a big piece of a bigger market that is much bigger than all of the proprietary market.

Could you talk about your new desktop publishing package?
We see a tremendous dealer interest in that so we're going to be shipping the first week in April. We have a couple systems here at the Faire that are being shown to dealers. It was really conceived by my marketing people and seems to be quite a hit.

So you're going to offer the PC, printer and software?
Right. I think it'll be the first time that a whole package has been put together in just one complete system. Dealers can, of course, patch these things together, but it's difficult. The service is very difficult when they don't know what a problem is or who to call. They might call Ventura, they might call GEM, they might call Kaypro if we supplied the computer, or they might call Epson on the laser printer. You never know which one it is. With our system, we'll back it 100%, and that's what they want.

Is this idea of offering everything together the same philosophy Kaypro showed in offering its first computers as complete packages?
It is the same philosophy, and it's the main reason why the dealers will stick by Kaypro and why there is such dealer loyalty. I know George Morrow once said that dealer loyalty was an oxymoron. But he didn't know what to do to get the dealers on his side. He didn't develop that liaison and that rapport, and I think that's what Kaypro really stands for. We're the champion of the independents and we've been that for five years. We feel very strongly about maintaining that position and being a high profile, service oriented company which really takes care of its dealers.

So you think that rapport with the dealers is one of the keys to the upsurge in your business?
Absolutely. The transition from the CP/M products to the MS-DOS products was obviously a tough time for the dealers because they were staying loyal to Kaypro, but we didn't have a product that you had to have to be in the market. Now we have it, and we're reaping the benefits.

You talked about the tough times and then the good times, and you read so many stories that call Kaypro a rollercoaster company—do you see yourself that way? Is that really that uncommon in the computer business?
No, I don't think we're really that way. We've had one rough time. It was a transition from CP/M to IBM compatible. I think that most analysts even agree that we're the only company that has made the transition.

And all the other ones?
They've gone into Chapter 11. I think we grew very fast, but I don't think we're a roller coaster company.

Back to the 386. Is it going to be your foundation, or is it just going to be one of a series of computers you'll offer?
My prediction today is that a 386 architecture will be the next standard. That may change in six months, but right now that's my best guess. It has enough power to run the kind of software that needs to be written for education, for better ease of use, interfaces, voice, and real time animation—all these things that just haven't been done yet. They're out of

ANNOUNCEMENT

The *DEALER DEDICATED* Distributor specializing in what we know —

DESKTOP PUBLISHING

We at TCI are unique in the software distribution industry in that we are Dealer Dedicated in our Sales, Support, and Service! Our product list includes:

Page Builder by White Sciences

Ventura Publisher by Xerox

Harvard by Professional Publisher

Font Factory

PC QUIK-ART

The Missing Link (conversion program even allowing MAC to IBM conversion!) and hundreds more

SPECIAL

We are exclusive Western United States distributors for PC QUIK-ART and THE MISSING LINK offering over 90,000 ready to use graphics art clips at 300 dpi, compatible with all DTP Programs. Based on standard newspaper themes, they are sold in volumes of 200 clips each. Millions of dollars in National Advertising generates leads that are directed to area dealers exclusively! We support our dealers.

Dealer packages from as little as $^{\$}189^{53}$

TRI-CON INTERNATIONAL

12371 Haster, Suite 105
Garden Grove, CA 92640

To Order Call
800-338-0090
714-750-3992

OFFICE FURNITURE WAREHOUSE S·A·L·E·S

krueger

DataBord 920

A handsome addition to your home or office workspace. Ergonomically designed to provide maximum comfort by adjusting forward/backward/up/down, (monitor & keyboard separately). Modular format. Shown here with surface extension and storage pedestal.

407 Francisco St. Northpoint San Francisco CA 94133
Hours 9–5:30 Mon-Fri / 10–4 Saturday (415) 397-2097

the purview of computers because we've been stuck in the old standard. Now the 386 has the power to become the new standard.

We don't really have a hardware standard, because Compaq and Kaypro haven't been out there quite long enough. Although if we continue to be alone out there and other people come along and consume the things, we could very well become the hardware standard.

To have a standard you have to have hardware and a DOS. And then the ISVs can go to town and create a huge new marketplace out there—which is what we're anticipating.

Do you see some other operating system superseding Microsoft's DOS?
Well, rumor has it that it's waiting for IBM to announce before they come out with one. But the DOS it's going to come out with is a 286 DOS, not a 386 DOS. So we're still playing a waiting game that is similar to when IBM came out with the Peanut. Although I don't think any company is going to go bankrupt over it, we have to some lesser extent the same kind of confusion going on.

Do you see this making sales sluggish? Are people unsure about what they want now or might want in six months? Are they unwilling to invest in a computer right now?
No, not too much; I think people are buying. They have a pretty clear idea about what they want. I think the real surge in sales will come when the new standard has been out there for a while and the software that utilizes this chip to its maximum is on the market. That's when we'll see a great surge in sales.

The person running a 20-person office who wants to network knows that for another $2000 a 386 is going to be plenty of power for the next five years. He's not worried if IBM will come out with something better. It doesn't matter. If it will run his network, he'll hook his office together. To him it's a piece of office equipment. I'm saying that the standard will create a big new market for those who heretofore decided that they weren't quite ready to get excited about personal computers.

So you think the 386 will be the standard for the next five years?
I think it will.

And not a 486?
Well, that's part of the confusion. We have a 386 and we have a 286. And we still don't have a DOS for the 286. IBM hasn't sanctioned anything for the 386, and now you're talking about a 486? There is a lot of confusion. And that's detrimental to anyone but people who have been around computers for a long time. For those who are buying their second computer, there is still a huge market there. But for opening up new markets?

It was said that there were 60 million desktops in the country that needed microcomputers on them. Well, there's still 40 million that don't have computers on them. Why? Because the first 20 million were either early adaptors or close to early adaptor-type managers. Other people are waiting for something that's easier to use.

And Kaypro's ready to sell them that 40 million?
You bet. Our main thrust is to keep pushing our service and the features of our product. This is catching on and has created a lot of momentum for us at the present time. We really push the eight points in our ad. We run three times faster than IBM, we guarantee IBM compatibility, we run all the video standards on the monochrome monitor, the software, of course, is bundled, and all these kinds of things that no one else really gives you. We have these things that a few years ago would have been very hard for the public to understand. But now the market is more and more up on what you should look for when you go buy a computer. They already now it should have two drives and a keyboard. That part they know, thank God.

UPDATE

In the wake of IBM's new product announcements on April 2, *MicroTimes* called Kaypro to get a reaction to the new releases. As David Kay was out of town we talked to Executive Vice President John Hentrich.

When asked how he felt about the new 386 machine announced by IBM, Hentrich said that the people at Kaypro were very pleased—that the introduction of a 386 machine by IBM legitimizes the technology and opens the way for new applications to be written which will drive the marketplace.

Hentich offered an interesting analysis of the new IBM computers. He said that IBM introduced a proprietary machine to lock up the Fortune 500 market. This will hurt competitors like Compaq that have decided to go head to head with IBM in the corporate marketplace, he said; it will not, however, hurt Kaypro, because Kaypro's market strength lies with the independent dealers who sell to medium and small businesses and individual users. He quoted a *Wall Street Journal* article which said that IBM may have captured the Fortune 500, but by doing so they have isolated themselves from the rest of the world.

Kaypro believes that the 386-based computer is the machine of the future. This is especially true for those who have been waiting for a more powerful and simpler machine. Kaypro is now ready to reap the benefits of a legitimized technology, an operating system that will take advantage of the powerful 386 microprocessor, and the multitude of more useful and powerful applications that will be developed now that IBM, at last, has a 386 of its own. ☐

Computer Insights, Computer Age and ECX Computers Come Together To Offer The Best Of Kaypro At The Best Of Prices!

FREE 90 Day Financing! FREE $700 Of Software With System!

FREE $700 Of Software W/System

KAYPRO PC 30 Complete 30 MB Hard Disk System

- Fully IBM Compatible Guaranteed 100%
- 768K RAM
- 30 Meg Hard Disk
- Turbo Dual Speed
- Up To 3X Faster Than IBM and Twice As Fast As Leading Edge
- 9 Expansion Slots
- 1 Floppy Drive Expandable To 2
- AT Keyboard
- Hi-Resolution (720x348) Mono Monitor
- Easily Upgradeable To An AT
- Real Time Clock & Calendar
- Hercules Compatible Graphics Card
- Phoenix BIOS
- Wordstar Professional Release 4
- Spelling Dictionary
- Thesaurus (Synonym Finder)
- PolyWindow & Desk Organizer

- Automatic Master Menu
- MS DOS 3.21 & GW BASIC
- 12 Month Parts & Labor Warranty
- Made and Supported In The USA

$3000 Value

SPECIAL LIMITED OFFER $1695

WE WILL MEET OR BEAT ANY ADVERTISED PRICE!!

Kaypro Mouse W/Software 1/2 Price With System Purchase!

COMPUTER-AGE

2199 So. El Camino Real
San Mateo, Ca 94403
(415) 348-2667

COMPUTER✷INSIGHTS
Specialists in Computer Applications to Business

40961 Grimmer Blvd.
Fremont, Ca 94538
(415) 490-0685

ECX Computer Co. & Service Center

2678 N. Main St.
Walnut Creek, Ca
(415) 944-9277

*Each store is independently owned & responsible for all sales & warranties.

Life With A Macintosh SE

By Jim Wolcott

Now that it's been a couple of months since Apple held its gala, million-dollar invitation-only party to introduce the Macintosh SE and the Macintosh II . . . now that images of those computers have leered at us, Cyclops-like, from the cover of every Macintosh magazine . . . now that every Macintosh loyalist has decided when, and how, and what vices they'll give up to pay for their new Macintosh II (when available) . . . it's probably time to shed a little light the one new machine that *is* available. You know . . . the other one. The one everybody *isn't* talking about. The Macintosh SE.

There's a lot *not* to talk about. The Macintosh SE looks roughly like the previous Macintosh Plus. It's still built into a sealed box. It still uses the same connectors for the printer, modem, and SCSI port. But the Macintosh SE . . . well, it looks funny. Worse, it's shipped with a doorstop-shaped mouse that will be a foreign object in the hands of a seasoned Macintosh user.

What's the new machine really like? Is it faster? How do the new features relate to the average user? Does the SE run all existing software? Most importantly, does the SE represent a step forward for the Macintosh family, or is it Cupertino's Platinum Placebo?

The Macintosh SE is expected to become Apple's mainstream business machine.

THE NEXT-GENERATION MAC

For openers, the Macintosh SE is an entirely new computer: though similar in appearance, the only parts it shares with the Macintosh Plus are the CRT video display and the internal floppy-disk drive. The case, the keyboard, the mouse—even the *color* is new. In the past, Apple has offered "upgrade packages" for the Macintosh, so that older Macs could be retrofitted and brought up to the latest specifications. No more. The Macintosh SE represents a departure point: an entirely new generation of Macintosh computers.

The Macintosh SE is available in two configurations: either with two 800K internal floppy-disk drives, or with a single 800K floppy drive and an internal 20 megabyte hard-disk drive.

While the machine looks much like older members of the Mac family, one of the prominent clues of internal differences is the absence of cooling vents on top of the Mac's cabinet. The SE is fitted with an internal squirrel-cage fan, mounted just to the rear of the power-supply board (the hottest corner of the enclosure). Cooling air is drawn through the sides of the cabinet, and through the front under the disk drives—which helps cool the motherboard circuitry of the Mac, still mounted flat on the bottom of the cabinet.

In normal use, this fan is *loud*. From an engineering standpoint, it's likely that the fan was fitted to suit the requirements of the internal hard-disk option. For the plain-vanilla SE fitted with two floppy drives, it's a bit much. Apple is aware of a swelling tide of customer complaints, and is . . . well, looking into the problem.

The power supply—a topic of widespread controversy on previous Macintosh computers—has been completely re-designed. Power output is up to a full 100 watts, which should be enough to power the optional internal hard-disk, a fistful of RAM-upgrade chips, and who-knows-what else.

Another unique feature of the

We Have It All . . .

Largest software selection in the world

Everything for APPLE, IBM, ATARI, AMIGA

AMIGA

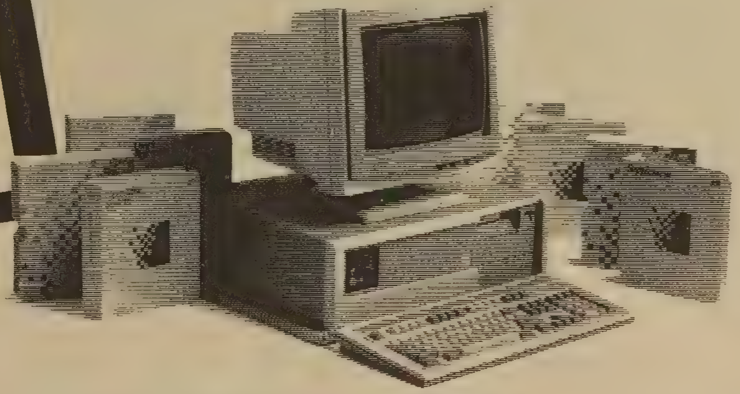
UNSPEAKABLY ADVANCED

Largest Amiga Software & Hardware Selection in Northern California.

The Oldest Authorized Amiga Dealer in the Bay Area.

AST PREMIUM/286
#1 RATED AT, "EDITORS CHOICE P.C. MAGAZINE"

50% faster than the 8 MHz IBM PC AT
10 MHz, 0 Wait 100% Compatible



AST RESEARCH INC.

IN STOCK NOW

Authorized Retail Dealer

LEADING EDGE
INFINITE MEMORY SYSTEM

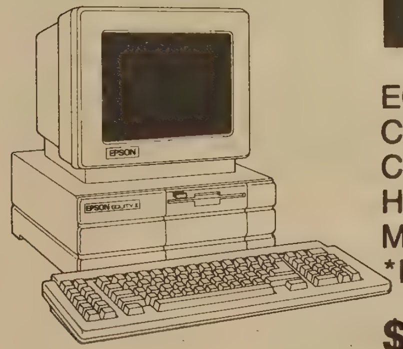
LEADING EDGE

FEATURING:
Bernoulli Technology®
(40 msec average access time)
Two removable 20MB Leading Edge Infinite Memory Cartridges
RETAIL

$1995

Leading Edge and Logo and Model "D" are registered trademarks and Leading Edge, Infinite Memory System, Infinite Memory Drive, Infinite Memory Cartridge, and IBM Compatibility Logo are trademarks of Leading Edge Products, Inc. IBM is a registered trademark of International Business Machines Corp. Bernoulli Technology is a trademark of Iomega Corp.

EPSON®



EQUITY 1™ Personal Computer, Built for Business!
Computer Systems with 20MB Hard Disk Drive and Monochrome Monitor
*Epson reliable & IBM compatible

$995

Authorized EPSON Major Accounts Dealer

LEADING EDGE #1 NEVER UNDERSOLD

WINNERS CIRCLE SYSTEMS

2618 Telegraph Ave. • Berkeley, California • 845-4814
Authorized Corporate & Institutional Dealer

power supply is compatibility with various voltages. The Macintosh SE will automatically adjust to either 110v or 220v AC power sources, without the need for external voltage convertors. Want to take your SE overseas on business? Just bring along the cables required to plug it into the wall.

The new power supply feeds a revamped motherboard: the "thinking" component of the Macintosh SE. The most significant—and the most hidden—feature of the SE is a 96-pin bus connector located along the side of the motherboard. While it's not a true slot, like the NuBus connector of the Macintosh II, it provides a straight-through, unbuffered connection to the 68000 microprocessor that is the heart of all current Macintosh computers.

This bus connector paves the way to a variety of performance upgrades, already being announced by third-party developers. Want a 68020 processor, with a 16MHz clock speed, and a 68881 co-processor like the Macintosh II? No problem. Just plug it in. The Macintosh SE is equipped to support a wide range of hardware packages for this bus connector. MS-DOS emulators, big-screen adapters, and other products are already in the final stages of development to take advantage of it.

Also on the new motherboard are enlarged, 256K ROM (read-only memory) chips—double the size of the 128K ROMs installed on the Macintosh Plus. At this point, about 170K of the 256K capacity is actually used in the new ROMs, with the bulk of the changes going to support the color QuickDraw routines employed on the Macintosh II. Of course, with its 9" black-and-white display, color isn't a primary concern for the Macintosh SE. What is a concern is how these new ROMs will interact with future software—with software written for the Macintosh II. This is no small consideration: at this point, you can bank on the fact that every new software package will be written with the Macintosh II, and the new ROMs, in mind.

The keyboard is another big change for the Macintosh SE. The keyboard is now sold separately from the Macintosh, and is currently offered in two styles: the 81-key "Apple Keyboard," and an enlarged 105-key "Extended Keyboard."

The move to make the keyboard a separate item was made for several reasons. Obviously, it gives customers the choice of the keyboard which best suits their needs. It also opens the door for third-party manufacturers to offer variations on Apple's keyboards, perhaps with options and capabilities to suit specialized business software.

A not-so-obvious aspect of offering the keyboard separately is the potential it suggests for the SE to use software that won't use a keyboard at all. For example, future music software may be designed to interface music synthesizers directly into the Macintosh SE's "desktop bus" port, or may involve circuit boards for the SE's expansion slot—wiring synthesizers and other musical instruments directly to the computer. Other keyboard-less applications might apply the Macintosh SE as an analytical instrument: a tool for calibrating and tracking laboratory experiments, or for maintaining quality control on a production line. Such applications could easily allow all data-input to be directly channeled to the motherboard for processing, with the screen display, or hard-copy print-out automatically monitoring the results.

The Macintosh SE represents a departure point: an entirely new generation of Macintosh computers.

THE SE IN REAL LIFE

The unit we reviewed was the standard Macintosh SE, fitted with two internal 800K floppy-disk drives, and the standard 81-key Apple Keyboard.

The Apple Keyboard is about the same size and shape as the keyboard supplied with the Macintosh Plus, but features a slightly different key layout. The 10-key numeric keypad is still to the right side of the keyboard, and its keys are unchanged from the Macintosh Plus. For the main section of the keyboard, the "arrow" keys (used to move the screen cursor) are now along the bottom row of the keyboard, and the caps-lock key has been relocated to the bottom-left corner of the keyboard. The keyboard also sports three new keys: Control, Escape, and Reset. When tried with a variety of Macintosh software, these three keys seemed to have no effect; at this time, they simply aren't recognized by existing software.

To make room for all this key shuffling, the space-bar has been made narrower, and the size of the Option key has been reduced to the diminutive size of the other alpha-keys. While the narrower space-bar didn't prove to be any problem for touch-typists, the Option key is another matter. Its new, small size, and its placement — awkwardly down under the left pinky—make it difficult to reach. Many Macintosh applications make use of Option-key shortcut combinations, and the Option key is used to create special mathematical and typographic characters from the keyboard. In short, the new Option key will slow down a touch-typist. It's not a matter of "getting used to it"; the new key layout is simply inferior to the keyboard of the Macintosh Plus.

To add insult to injury, the Apple Keyboard isn't 100% compatible with existing Macintosh software. In technical terms, the "keyboard mapping" of the new Apple Keyboard differs from the keyboard of the Macintosh Plus. For example, with Microsoft *Word* version 3.0, the command-shift-4 keystroke, used to select the next word in a document, not only doesn't work in the Macintosh SE, but will actually "crash" the program—forcing a re-start of the computer, and the loss of all unsaved data. Since the new Apple Keyboard, and the larger Extended Keyboard, will form the mainstay of future Macintosh computers, software such as *Word 3.0* will evolve to accommodate these differences. As of right now, compatibility with existing Macintosh software is a hit-and-miss proposition.

The Macintosh SE is undeniably faster than a Macintosh Plus. On the motherboard, a single VLSI "gate-array" chip has replaced a battery of 16 chips employed to serve the same function on the Mac Plus. Allegedly, this new VLSI chip runs cooler and consumes less power than the complement of chips on the Macintosh Plus—which should enhance the reliability of the SE.

The way the SE addresses (thinks about) the screen is also slightly different: since the screen is a dynamic element for data-entry on the Macintosh, past incarnations of the Mac have scanned the screen for data-entry on a one-to-one basis (one processing cycle of the 68000 CPU, one scan of screen data, one scan of the CPU, etc.). For the SE, this ratio has been changed to three-to-one (the CPU given three consecutive cycles, the screen data one, the CPU another three, etc.). The net result? The Macintosh SE has more time to devote to calculations, and is therefore about 10% to 20% faster than a Plus, depending on the application.

Though it uses the same pin configuration, and is compatible with SCSI devices engineered for the Macintosh Plus, the SCSI port on the Macintosh SE has been completely revised. When the Macintosh Plus was introduced a little over a year ago, there were virtually no SCSI hard-drives available for the machine. To minimize possible incompatibilities, Apple deliberately made the SCSI port slower than it might have been, in hopes that a slightly slower data exchange (with more comprehensive error-checking, or "handshaking" routines) would lead to greater reliability from SCSI devices. As the market has matured, Apple has determined that there's no undue concern for SCSI error-checking, and has pulled out the stops to let the SCSI port for the Macintosh SE run at top speed.

It should be pointed out that some SCSI hard-drive manufacturers have violated Apple's guidelines in a quest for higher performance, and employ hardware or software "patches" to make their hard-drive run faster on a Macintosh Plus. Since the Macintosh SE and the Macintosh II will employ the new SCSI port, such unorthodox patches might not work with the new machines. If you're thinking of upgrading your computer, and want to use your existing SCSI hard-disk drive, it would be wise to try the drive with the Macintosh SE before making a commitment to purchase one.

THE BOTTOM LINE

To put the Macintosh SE into perspective, this machine offers (for the most part) compatibility with the existing body of Macintosh software. As of today, there are a few peculiarities for various applications, but, as time goes by, significant software packages will be revised to accommodate the Macintosh SE—to accommodate the differences of the ROMs and the differences of the new Apple Keyboard.

The Macintosh SE offers a compact, expandable package. Even with the entry-level dual 800K-drive version, the SE represents a stand-alone, portable workstation. Throw the whole thing in a bag, add a box of floppy disks, and you have a ready-to-go productivity center that can be toted into a classroom or used for on-site research at a public library. The expansion bus on the motherboard invites accessory cards to translate IBM-generated MS-DOS data, making it an ideal keystone for a complex office network system. The improved power supply, with its (noisy and damnable) cooling fan, should enable the Macintosh SE to stand up to the rigors of the most demanding, round-the-clock on-line operation.

Will the Macintosh SE replace the Macintosh Plus? Should the average user rush out and upgrade to the latest incarnation of the "computer for the rest of us?" Probably not. The Plus and the SE are targeted at different markets. Apple envisions that the Macintosh SE will become a mainstream business tool: an adaptable, convertible, powerful and portable instrument to complement white-collar desktops throughout the country. The Plus? Ideally suited for environments where the features built into the Macintosh answer the needs of the particular application. And then, there's this Macintosh II . . . ☐

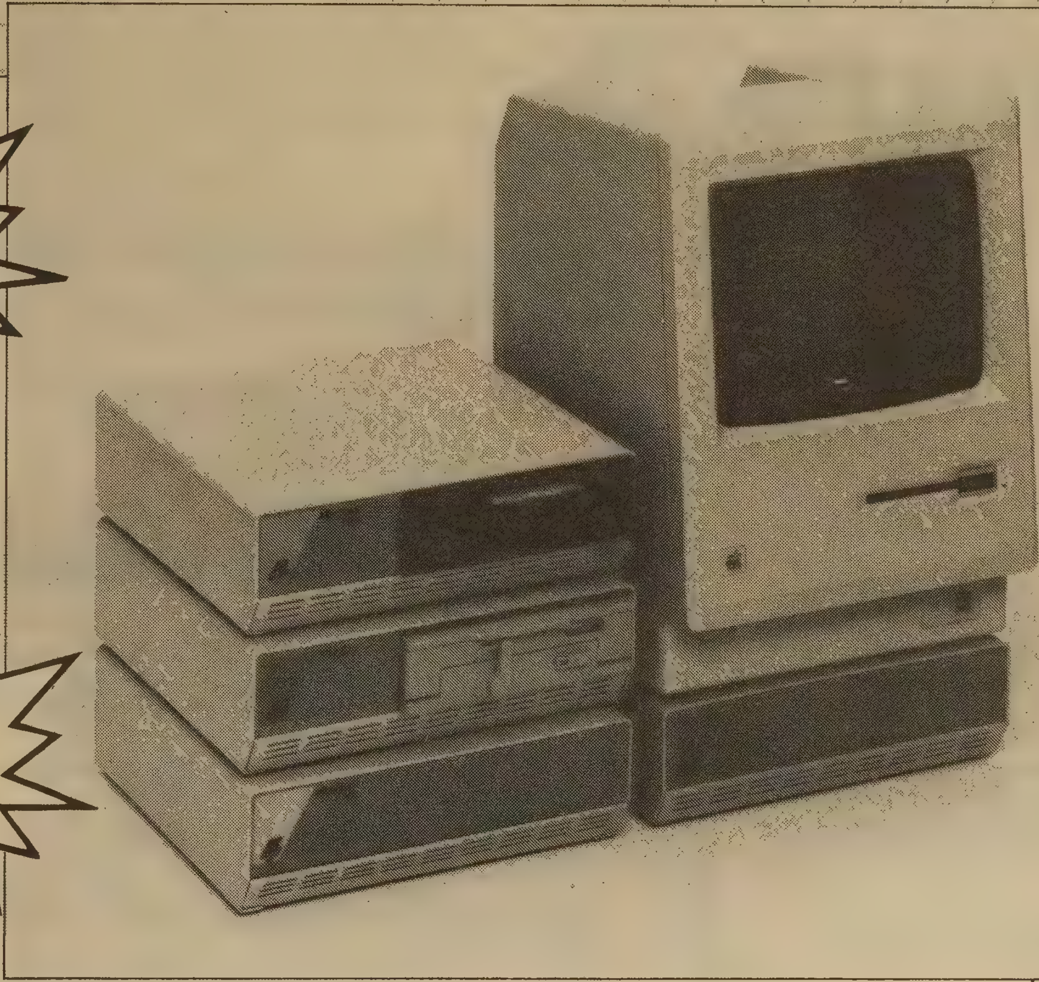
Copyright ©1987 by Jim Wolcott. All rights reserved.

Peripheral Land Launches The NEW TOUGH DRIVE

With An Automatic Head Separator That Virtually Eliminates Head Crashes

NEW
TURBO
DRIVER SOFTWARE
3X FASTER*

SE
MAC II
COMPATIBLE



PL SERIES SCSI HARD DISKS

Just Got 3 Times Faster, Tougher and More Affordable

These are the fastest SCSI hard disks available for Macintosh Plus or Macintosh 512. The main features include: New turbo software which increase performance 3 times faster, plated media hard disks for long reliable use which are 100 times harder than oxide media, new variable partitionings software, exclusive shock protection can be dropped & sustain 60g's of force, compatible with Apple's new AppleShare file server software.

- PL 20-21 Meg Formatted Drive
- PL 30-32 Meg Formatted Drive
- PL 50-50 Meg Formatted Drive
- PL 80-80 Meg Unformatted Drive
- PL 172-172 Meg Unformatted Drive
- PL 230-230 Meg Formatted Drive

Also Available From Peripheral Land

THE MACBACK PLUS-SCSI TAPE BACK-UP

This is a tape drive that delivers now. Finally there is a fast, easy and reliable way to back up your hard drives. If you own an Apple HD-20 or other disk drive, get the MacBack Plus and sleep confidently tonight.

Say "goodbye" to floppies and "hello" to 22 megabyte tape cartridges. The MacBack Plus can either backup or restore 20 megabytes in minutes. The back-up criteria can be selected by file, folder, volume or incremental files. The MacBack Plus is available in either 22 or 60 megabytes of awesome capacity.

*Disk Timer II Results. Without New Turbo Software-189 Deci Seconds. With New Turbo Software-54 Deci Seconds.

Available At These Dealers or Call For Dealer Nearest You

CJS Systems Berkeley CA (415) 237-5257
Macorchard Berkeley CA (415) 540-6224
Mr. Naturals Computer Store Berkeley CA 94704
Computer Center of Hayward Hayward CA (415) 538-7368
Dublin Computers Dublin CA (415) 829-8644
Tech Doc Los Gatos CA (408) 353-2663
MUST Sunnyvale CA (408) 733-5000
Source Mate Mill Valley CA (415) 381-1011
Priority One San Jose CA (408) 435-7300
Computer Store of Oakland Oakland (415) 763-7900

CPSA Livermore (415) 443-9086
Julian Systems Concord CA (415) 686-4400
Computer Ware Palo Alto CA (415) 323-7557
Beal Systems Orinda CA (415) 254-1263
Compubiz San Jose CA (408) 723-3363
Computer Center of Santa Cruz Santa Cruz CA (408) 458-1644
Compu Guys San Jose CA (408) 248-1113
Computerland Of Danville Danville CA (415) 831-0166

Software & Such Stockton CA (209) 474-1414
Microage San Jose CA (408) 255-2881
Realty Computer Systems Concord CA 94520
University Of The Pacific Bookstore Stockton CA (209) 946-2327
Bask Computers Pleasant Hill CA (415) 689-8800
Kent & Assoc. San Anselmo CA (415) 457-9983
Hornet Bookstore Sacramento CA (916) 278-6500
Wolf Computer Los Gatos (408) 354-1210
Micro Age Computers San Jose CA
Colby Systems Fresno CA (209) 222-4985

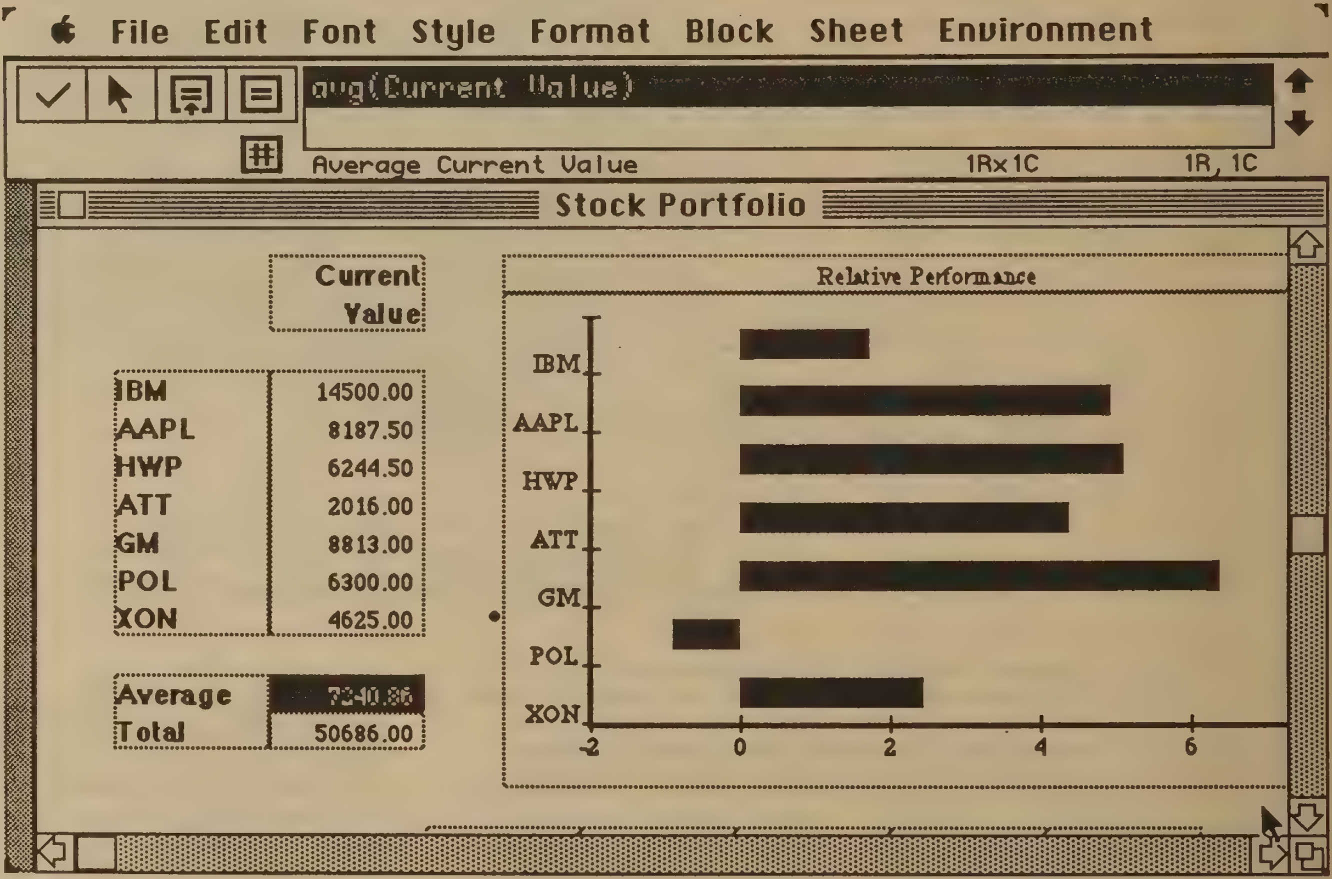
THE SCSI EXPERTS
PERIPHERAL
LAND

47800 Westinghouse Drive, Fremont, CA 94538
Phone (415) 657-2211
Telex 650305-1733 MCI

TRAPEZE:

Powerful Calculation And Report Tool For Mac Users

By Charles Seiter



	Current Value
IBM	14500.00
AAPL	8187.50
HWP	6244.50
ATT	2016.00
GM	8813.00
POL	6300.00
XON	4625.00
Average	7240.86
Total	50686.00

FIGURE 1

This stock market application of Trapeze shows a data block next to a chart block in part of a report summary. For flashy extra effect, such a report could also include a picture block with the corporate logos associated with the companies in the table. Report generation is one of Trapeze's highlights.

Trapeze is a new type of calculating tool, with powerful applications in both business and science and engineering. Its publisher, Data Tailor, calls it "the spreadsheet without limits," a reference to *Trapeze's* ability to handle 32,000 sets of 32,000 × 32,000-cell "blocks."

This doesn't really explain the product, though. *Trapeze* is actually a new approach to calculation and data display, and goes far beyond the capabilities of any spreadsheet-type product on the market.

WORKING WITH DATA BLOCKS

When you start a *Trapeze* session, you are presented with a blank screen area for defining your work, instead of the usual spreadsheet grid of cells. A set of tools for drawing and manipulating "blocks" of data appears in the upper-left hand corner, and you will use these to set up your calculation.

A block in *Trapeze* may be an array of numbers, a graph or chart, or a database table (blocks may also be text, graphics, or digitized pictures). In a data block (which looks like a mini-spreadsheet) you can enter data by hand or by import from other sources or data files via the Mac Clipboard. The blocks "autosize" to accommodate imported data; you can define blocks called Data1, Data2, etc. and simply import disk files of varying lengths to them without worrying about formatting. Likewise, you can define the picture block RoseIsARoseIsA and then import your *MacPaint* artwork without worrying about the size of the graphic (it can be scaled and moved around later).

Take a look at Figure One, a captured screen from a *Trapeze* session with a stock-market portfolio worksheet. The table on the right is a block, and the chart on the left is also a block. These two elements can be moved around the screen and the printed page for effective display, and can be accompanied by text blocks of any size explaining the calculation. In Figure Two, a similar display from a scientific worksheet is shown (like all well-designed Mac software, *Trapeze* is easier to show than to describe); it has a graph and table and some title blocks of text.

The point here is not just that the display can be tidily arranged, but that the display is "live"— change a number in the table and the graph immediately changes. All the graphs in *Trapeze* are typically linked to one or more of the mini-spreadsheet data blocks, so they automatically update. This allows (in fact, it encourages) active exploration of the numbers and experiments with their presentation. For example, you can have several different types of charts for the same data set active on the screen at the same time, for comparison.

Another feature that encourages experimentation is the enormous amount of space available. Although in many ways the flexibility built into the block concept is *Trapeze's* greatest strength, the sheer size of the worksheet (limited only by memory) is very helpful, especially as the amount of RAM for the typical Mac floats past 1 Meg on its way to the stars (Intel, as one example, is producing an 18 Meg board for the Mac II).

OTHER FEATURES

Besides the usual business functions (amortization, net present value, and related time-value-of-money types), *Trapeze* offers 17 date functions and six types of charts (charts are seen by

> ***Trapeze is actually a new approach to calculation and data display, and goes far beyond the capabilities of any spreadsheet-type product on the market.***

SHORELINE HAS THE BEST!!

The Enhanced Leading Edge® Model "D"™ In Stock

20 MB System $1295

- 7.16 MHZ clock speed
- IBM compatible
- 512K RAM Expandable to 768K
- Dual floppy, 20MB, 30MB systems available
- High resolution monochrome monitor

Leading Edge® Model "L" Series™ Modem

For Leading Edge, IBM and Compatibles

1200B only **$149.95**

2400B only **$289.00**

Hayes Compatible
Auto-Answer, Auto-Dial

New from Leading Edge The Infinite Memory System a fully configured Model "D" with two 20Mb removable cartridges. Call for details.

Leading Edge is a registered trademark and Model "D", Model "L" Series and Information System are trademarks of Leading Edge Products, Inc. IBM is a registered trademark of International Business Machines Corp. Hayes is a registered trademark of Hayes Computer Technology. Lotus 1-2-3 is a registered trademark of Lotus Development Corp.

Infinite memory system is a trademark of Leading Edge Products, Inc.

LEADING EDGE
AUTHORIZED RETAIL DEALER

AST Premium 286

20 MB System $2995

Features:

- Multispeed 80286 CPU with user selectable 6, 8, 10 MHz.
- True "0" wait-states
- AST FASTRAM enhanced memory card - expandable to 2MB in a single slot
- FASTslots - seven industry standard expansion slots.
- 25 pin asynchronous serial and parallel ports and a real-time clock calendar
- AST-3G Plus multimode enhanced graphics adapter
- AST flat-screen, hi-resolution white phosphor monitor
- 1.2 MB diskette drive
- One-year warranty

"AST's first entry into the desktop computer market is a powerful AT compatible that runs at 6, 8, and 10MHz. . . Well-made, good price, good vendor reputation for quality and support, comes with a 32-bit RAM, our fastest tested AT."
—Infoworld, 3/87

AST RESEARCH INC.

The AST Premium Publisher

SPECIALS*

COLOR MONITOR SALE

Sony 1201	$439
Sony 1311 CR	$439
Princeton HX-9	$349
Taxan 440 & Bob Card	$695

DEMO SALE

Apple 2C $495

Amiga, Mac and Apple software clearance sale
All titles $15

(values up to $149.95)

Shoreline 3000XT Turbo IBM Compatible Computer

- **2 floppy drives**
- **512K Ram**
- **Mono display**

Systems Starting from

$795

Orchid Tiny Turbo 286

Make your Leading Edge or IBM 300% Faster

$495

(regularly $695)

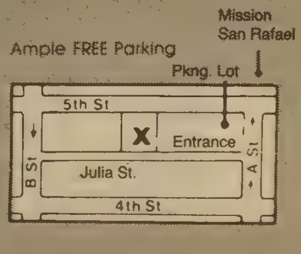
*while supplies last

SHORELINE SOFTWARE & COMPUTERS
1125 A STREET, SAN RAFAEL
SINCE 1982
459-5800

Mon.-Fri. 9 a.m.-6 p.m. Sat. 10-5

FINANCING AVAILABLE

Ample FREE Parking



OUR FACTORY-DIRECT VOLUME BUYING SAVES YOU MONEY . . . QUALITY ASSURED

All Systems: 7-Day Unconditional
Return Policy Special 1 Year Warranty

A. LOGOS XT System $699
1. 640K RAM Fully Loaded Mother Board
2. 2 360K Floppy Disk Drives/Controller
3. Case/150W Power Supply/Keyboard
4. Mono/Graphics/Printer Adaptor/(Hercules Compatible)
5. High Resolution Monochrome Monitor

B. LOGOS Enhanced XT System. $1120
1. LOGOS XT System, Plus
2. 20MB SEAGATE Hard Disk Drive/Controller
3. 1 RS232 Serial Adaptor (1 Optional), Real-time Clock, Game Adaptor, Parallel Adaptor

C. LOGOS AT System $1250
1. Fully Loaded 1MB RAM with Dual Speed (6/8 MHz) Mother Board
2. 1 1.2 MB High Density Floppy Disk Drive
3. 1 360K Floppy Disk Drive
4. WESTERN DIGITAL Floppy/Hard Disk Controller
5. Mono/Graphics/Printer Adaptor (Hercules Compatible)
6. High Resolution Monochrome Monitor
7. 200W Power Supply
8. IBM PC/AT Compatible Keyboard
9. IBM PC/AT Compatible Case

D. LOGOS Enhanced AT System $1690
1. LOGOS AT System, Plus
2. 20MB SEAGATE Hard Disk Drive
3. Serial/Parallel Adaptor

E. LOGOS 386 16 MHz System . . . .$CALL

FOR PC/XT
1. Color Graphic Card. $59
2. Monochrome Graphic Card
   w/Printer. $55
   w/Printer/Software $60
   w/Printer/SW/132 Col. $75
3. 384K Multifunction Card. . . .$75
4. Multi-I/O Card
   w/o Floppy Ctrl. $58
   w/Floppy Ctrl $75
5. Floppy Disk Controller $26
6. Printer Card $19
7. Printer Card/RS232 . . . .$42
8. RS232/RTC $34
9. 2 x RS232 Card $28
10. 4 x RS232 Card $69
11. 640K RAM Card (0K). $35
12. XT Computer Case $25
13. 2 MB Above Mem (EMS) . . .$109
14. EGA Card $189

FOR PC/AT
1. Printer/RS232 Card $49
2. 2MB Multifunction Card . . .$125
3. 3MB Memory Card $99
4. 6/10/0 Wait Baby AT Board .$445
5. 386-16MHz System . . .$13166

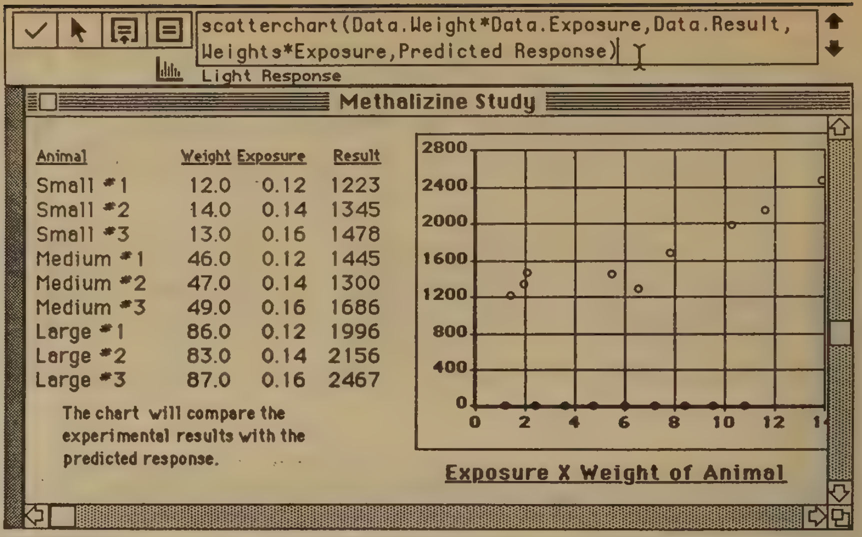
DRIVE/CONTROLLER
1. 360 KB TEAC 55 BV $83
2. 360 KB Fujitsu. $76
3. 20MB ST-225. . . . .$265
4. WD XT Controller $85
5. DTC XT Controller $84

MISCELLANEOUS
1. Bar Code Reader. . . . .$CALL
2. EPROM Writer. $89
3. PAL Programmer . . . .$CALL
4. 150W Power Supply $59
5. Keyboard . . . .$CALL
6. Logi Mouse $75

DEALER INQUIRIES WELCOME
Prices subject to change without notice.

Call for other products and prices
(408) 980-9511

NIC TECHNOLOGY, INC.
3020 Scott Blvd., Santa Clara, CA 95054
TLX: 1561096 • FAX: (408) 980-1530



```
scatterchart(Data.Weight*Data.Exposure,Data.Result,
Weights*Exposure,Predicted Response)
```

Light Response

Methalizine Study

Animal	Weight	Exposure	Result
Small #1	12.0	0.12	1223
Small #2	14.0	0.14	1345
Small #3	13.0	0.16	1478
Medium #1	46.0	0.12	1445
Medium #2	47.0	0.14	1300
Medium #3	49.0	0.16	1686
Large #1	86.0	0.12	1996
Large #2	83.0	0.14	2156
Large #3	87.0	0.16	2467

The chart will compare the experimental results with the predicted response.

FIGURE 2

This Trapeze screen from a scientific application also shows a data table and a plot of the data, with the plotting formula highlighted at the top. Ideally, report output can include blocks of summary statistics and a picture block diagramming the experimental protocol. Trapeze contains just about every item on a science/engineering wish list.

Trapeze as a simple function, rather than a separate get-into/get-out-of/cut-and-paste operation). There are string functions that make it possible to "word process" the text in text blocks, and a complete set of block-juggling functions (row-to-column, fill, reshape, etc.).

Also lurking in the *Trapeze* package is the most complete set of scientific functions ever offered in a "spreadsheet." You will find all types of statistics, transcendentals (including hyperbolics and gudermannian), and matrix operations. *Trapeze* functions for regression (linear, multiple linear, polynomial), matrix operations (inversion, determinant, multiplication), and solution of systems of linear equations, combined with a sophisticated Iterate function (the equivalent of a composite WHILE/DO-type statement) make it possible to mimic most of the operations of a programming language. The great convenience is that the functions can operate on blocks of numbers, and that graphic output is handled automatically. The functions may be combined in formulas (block names can be treated as variables in the formulas) so that graphic output summarizes the results of extensive calculation.

> ***In programming terms, Trapeze is to Excel as Pascal is to BASIC.***

But wait, as the hucksters say on late-night TV ... that's not all! It happens that these functions, optimized in the plain vanilla version 1.0, have now been optimized to access the 68881 numeric coprocessor directly. This means that, using *Trapeze*, number crunching applications like large matrix inversions clip along at better-than-minicomputer speed. It's difficult to imagine a more powerful piece of engineering software.

Trapeze is accompanied by an attractive manual which emphasizes the mechanics of setting up blocks at the expense of detail on functions, formulas, and graphing. Perhaps this has been done so that the large potential market of business users will find the manual friendly and accessible (for many business purposes, particularly report generation, *Trapeze* is superior to *Excel*), but it means that scientific users will need to explore *Trapeze's* wealth of features without much guidance. This is acceptable, however, since Data Tailor rightly supposes that: 1) *Trapeze* probably won't be your first exposure to calculating with a spreadsheet-like program, and 2) a manual which offered detailed illustrations of the use of all the science functions in this program would have to be delivered in a moving van.

CONCLUSIONS

Trapeze is a unique product, with particular strengths in data handling and display. It must be admitted that the idea of blocks takes a little "education"—you may find yourself muttering a bit during your first *Trapeze* session. Once you get used to the concept, however, it becomes completely intuitive, and feels much more natural than the older fill-in-the-grid paradigm for data handling. Besides that, report generation is truly impressive, and calculation shows world-class speed.

In programming terms, *Trapeze* is to *Excel* (to name a very good product) as Pascal is to BASIC. It's a refinement of the way information is handled, and provides new levels of insight into many standard applications. (*Trapeze*, version 1.0e, Data Tailor, Inc., 1300 S. University Dr., Suite 409, Fort Worth, Texas 76107, 817/332-8944. Price: $295. Requires: 512K Mac, one 400K drive—two 400K drives recommended, or one 800K for convenient operation.) ☐

Copyright ©1987 by Charles Seiter. All rights reserved.

APPLE COMPATIBLE DISK DRIVES

½ Height Apple Comp	$89
IIc ½ Height Floppy Drive	105
Macintosh 400K	95
Macintosh 800K	195

APPLE TYPE CARDS

IIe 80 Column w/64K	$44
Disk Controller	42
Parallel Interface	40
Graphics Parallel	59
16K RAM Card	34^{95}
Super Serial Card	69
CPM Card	44
No Slot Clock	49

DISKETTES

DS DD 5¼″ Box of 10	6^{95}
DS DD 3½″ 10 Pieces	$15
Apple & IBM Joysticks	$25
6 Outlet Surge Protector	$11^{50}

STOP

AND COMPARE OUR PRICES

IBM COMPATIBLE DRIVES

TEAC 55BV ½ Height 360K	$94
Fujitsu ½ Height 360K	84
Toshiba 1.2 Meg AT	119
Toshiba 3½″ 720K with 5¼′ mounting kit	144

IBM TYPE CARD

Floppy Controller	$34
Clock Card	34
Serial Card	34
Multi I/O	79
Hard Drive Controller	84
Monochrome w/Print	64
No Slot Clock	49
DOS 3.2 w/GW BASIC	79
20 Meg w/Controller	344
20 Meg Hard Card	394
30 Meg w/Controller	399

MOUSE SYSTEMS

M-2 Mouse w/Microsoft PC Mouse Software	$64
IMSI w/Dr. Halo & One Look Software	$84

CHIPS

Due to Price War Please Call For Best Prices
16K, 64K, 256K, 1 Meg 2716, 2732, 64, 256, 8087, 8087-2, 80287-6, 80287-8, 80287-10

MODEMS & CABLES

IBM 1200 Baud Internal	$99
1200 Baud External	104
1200 Baud HC	129
300 Baud External	44
6′ Parallel Cable	8
Serial M-M or M-Female	9^{50}
IIc Modem Cable	10
IIe to IIC Drive Adapter	10

We Ship Daily • 90 Day Replacement Warranty
DEALER Inquiries Welcome • Minimum $2 Shipping Charge

GUENTHER

COMPUTER PRODUCTS INC.

763 Chestnut
Unit B
Santa Cruz, CA 95060

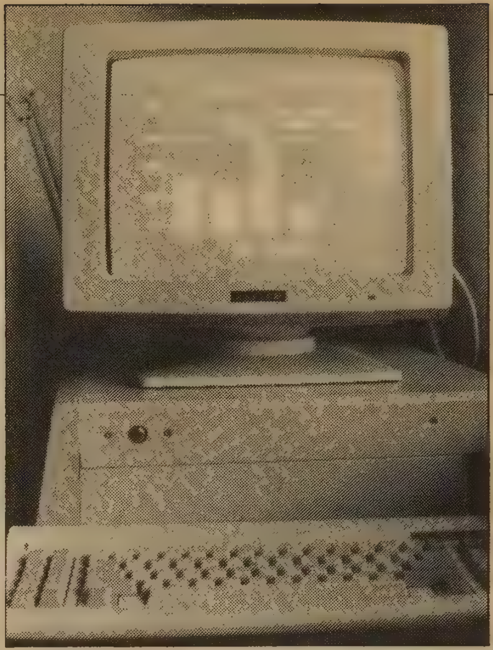
(408) 458-9404

Please Include
3% Shipping Charge

SHOW PARTNER

Visually Dramatic Presentations On Your Monitor Screen

By Sharon Rufener



Show Partner lets you use your PC's monitor for lively "slide-show" and animated graphics presentations.

Suppose you have to make an important presentation and you want it to be as slick and professional as possible, using computer-generated charts, graphs and artwork. Traditionally, you would use output consisting of printouts, slides or overhead projections, but these are pale replicas of what you see on your screen. Now there is another way to get your message across.

You can create lively, self-running shows in vivid color for viewing on the computer monitor itself, like the disk-based demos you have seen in the exhibits at computer fairs. The superior color and resolution, not to mention convenience, of the monitor makes it an ideal medium for displaying images to a small audience.

THE "SLIDE SHOW" SOFTWARE GENRE

Slide show software, running on IBM PCs and compatible computers, lets you assemble screen images into a logical flow and even make copies for distribution. Although this genre is a fairly new one in the realm of presentation graphics, there is an appropriate product for you, whether you are an occasional user or a professional artist.

The slide show software packages all work in much the same way. They have a memory-resident module to capture screen images from other programs, a graphics program to enhance the captured images or create new ones, a "script" program to string the images together into a self-running or prompted display with animation and viewer-interaction, and a run-time module to display the show. Shows can be copied to disk along with the royalty-free run-time module, and displayed on any computer with compatible graphics capability.

How capable a product do you need? For the art department professionals, there's *VCN Concorde* from Visual Communications Network, Inc. It's a deluxe, hefty package with every imaginable feature and function, and the high-altitude price tag of $695. It will fly only if you have an EGA card and a hard-disk system. It comes with a huge image library and generates graphs from spreadsheet files. It also offers freehand drawing with a mouse only. It currently doesn't support drawing tablets, which is a strange omission for a graphics package aimed at the professional artist!

At the other end, there's *Storyboard* from IBM for $250. It will run on everything from a PCjr to an AT, supports only IBM printers, and needs a CGA or EGA card. It is very easy to use and includes a limited graph generating capability, but you can't do freehand drawing with it.

Finally, there's *Show Partner* from Brightbill-Roberts, a terrific deal at only $79, but you can get it bundled for free along with Microsoft *Paintbrush* when you buy a new Microsoft Mouse. It is equal, but not identical, to *Storyboard*, and both will run quite handily on floppy disk systems. It doesn't make graphs, but it does offer freehand drawing with a mouse or tablet. We'll center this article around *Show Partner*, since it offers the most attractive combination of price and features.

After you have purchased *Show Partner* and run the tutorials to learn the basics, you are ready to put on your beret, sit in your director's chair, and become a slide show auteur.

HOLLYWOOD SCRIPTWRITER IN ACTION

A scriptwriter starts by writing a "treatment," a brief overview of an idea for a movie, and this is how you should begin your preparations. Fire up your word processor, write out your general concepts and get feedback from your buddies. Like any good plot, your script should have a beginning which sets the stage for what is about to happen and introduces the subject matter, the main body of the show where your ideas are developed, and finally, a resolution.

Movie makers often use "stock footage" from film libraries. It's much easier and cheaper to appropriate than to create, especially if you have limited artistic capabilities. Likewise, you should prowl through the images on the *Show Partner* Clip/Art disk to see if there is anything you can recycle. Unfortunately the *Show Partner* manual does not include illustrations of these, nor does it have an organized library system. So the only way to look at the offerings is to load them into the Graphics Editor program, one by one. You should also run the sample shows on the Clip/Art disk to see the effects which are possible, and print out their script files for handy "crib sheets" to use when you are building your script.

After your scenario is ready, you should make a "shooting script"—a list, in sequence, of each image you want to display, the program which will produce it, and any special effects you think would be appropriate for that image. Plan on interspersing title and text screens among your charts and graphs to add clarity and continuity.

Show Partner's SED (Script Editor) program has an admirable "auto build" feature. It will automatically generate a script for you, inserting the name of each image in the directory in sorted order. This saves a lot of keying and gives you a "rough cut" of your show. Before you build your screen-shot collection you should assign a file ID to each slide so they will sort in sequence. For instance, "10TITLE," "20BULLET, "30BAR," etc.

PLAN OF ATTACK

First, you will generate screens and capture them. Next you will edit and enhance them. Then you will put together a basic no-frills working version of your show. Finally, time permitting, you will play around with special effects (the *Show Partner* tutorials give you the basics; learning the sophisticated techniques is a hands-on process).

To build your artwork collection, first load CAPTURE and then the program to make screen images. A press of the hot-key will save each screen to disk. When your collection is complete you can proceed to edit and enhance them.

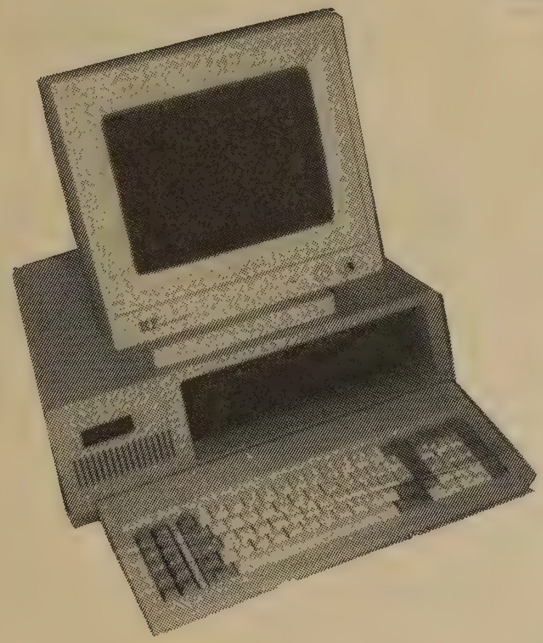
You will use the Graphics Editor program, "GED", mainly for adding text, removing extraneous details and changing the color schemes of your captured screens. It is also a reasonably competent artist's tool for creating original images, and particularly useful for making title screens and bullet charts. If you have used other draw or paint programs, the workings of GED will feel familiar. You can draw automated lines and shapes, fill enclosed spaces with color, block-off areas or objects and erase them, move them or change their size and color. You can clip objects from elsewhere and insert them, and you can make freehand line drawings.

SCREEN EDITING— MAJOR AND MINOR SURGERY

After you load GED, you will need to acquaint yourself with the font options. There are 20 type-faces; they come in three sizes, and offer backward-slanted, forward slanted (italic) and vertical styles. There are no illustrations of the fonts in the manual, so you have to bring up each

> **Like any good plot, your script should have a beginning which sets the stage for what is about to happen and introduces the subject matter, the main body of the show where your ideas are developed, and, finally, a resolution.**

top value from toptek



Runs Twice As Fast As IBM XT
And Runs CP/M
IBM PC XT Compatible

Only $499

Orig. $799

Includes:

640K Motherboard Installed • 150W Power Supply • Floppy Disk Drive
Monochrome Graphic Card w/Port • Keyboard

10 MHZ AT SYSTEM

Includes:

1 MB Motherboard (8 or 10 Mhz) • 200W Power Supply • HDC/FDC
Keyboard • 1.2 Mb Drive • FCC Approved

Only $999 Orig. $1599

PRINTERS & SUPPLIES

Epson LX 86	$179
Epson FX 86E	.329
Epson FX 286E	.459
Epson EX 1000	.555
Epson LQ 800	.449
Citizen 120D	.185
Citizen MSP-10	.285
Citizen MSP-15	.375
Cables	.7^{95}
Printer Stands	.8^{95}
All printer ribbons available	Call

CARDS & BOARDS

640K Motherboard	$87
Turbo Motherboard-4 Layers	.99
AT Motherboard	.330
Color Graphic Card	.45
Mono Graphic Card w/Printer Port	.55
EGA Card	.159
Disk I/O Card	.62
Paradise EGA Card	.159

MISCELLANEOUS

200W Power Supply	.80
150W Power Supply	.55
Surge Protector	.9^{50}
UPS (Uninteruptable Power Supply)	.225
Tape Back Up	.Call
EGA Monitor	.365
Mono Monitor	.85

MODEMS

Avatex 1200 Baud External	.95
Everex 1200 Baud Modem (Int.)	.99
Everex 2400 Baud Modem (Int.)	.199
2400 Baud External Modem	.255

HARD DISKS & CHIPS

4164	.Call
41256	.for
8087	.best
80287	.prices!
Seagate 4038	.549

SEMINARS

How To Build Your Own PC
Learn DOS Operation & Basic Troubleshooting Skills

Every Saturday at 10:00 AM
Call for reservations

$25 per person deductible from
Toptek computer purchase

1520 Taraval St.
San Francisco, CA 94116
Telex: 379-9197

TOPTEK
MICRO CENTER INC.
(415) 564-3500

Office Hours
Mon-Fri: 10-7
Sat: 10-5

ON SITE SERVICE & PROFESSIONAL CONSULTING AVAILABLE • DEALER INQUIRIES WELCOME

IBM is a registered trademark of International Business Machines, Inc.

You can save yourself a lot of time and frustration by thinking through the project beforehand. You will find it helpful and encouraging to get a simple but presentable version of your show up and running quickly, and then add your fancy extra touches to flesh it out.

likely-looking font name by selecting it and trying it out to see what it looks like.

Don't count on finding a font which will match existing lettering on captured screens—either replace all the lettering or find something compatible. It is a good idea to use the same font throughout the show to make the style consistent (and save going through the tedious font selection process repeatedly!).

After loading a screen file and selecting a font, you are back on the drawing board with your picture in front of you. Before adding text, you may want to clean up some clutter using the "erase" command, or shuffle things around to make room. To enter text, you put the cursor in the upper left-hand corner of where you want to start writing and start typing. You can hit RETURN to drop down a line, and BACKSPACE to erase mistakes.

Next, you will want to try out color schemes. For uniformity purposes, give related screens the same background color. Call up the Color menu, then select "Alter Color". To look at the color choices for the background, you move the color-select box to the far left so that it sits on top of the background color. You keep hitting INS to cycle through the choices and watch each transformation take place on your image. You can also move the color select box to any of the foreground colors and tap your way through those until you get the most pleasing combination.

After you've enhanced all your captured images you are ready to assemble your show.

A ROUGH CUT OF YOUR MOVIE

For this pass, you are going to limit yourself to just setting the transition effects and the timing to get a quick look at how things are shaping up. You don't want to tackle too many things at once, but you will make notes about other effects you want to try after you've gotten the basic version of your show finished.

You re-boot, and load SED, the Screen Editor program which creates the instruction set that stage-manages your show. You will see an empty script-editing form, in row and column format. Each row represents an image and each column is for a type of instruction to manipulate that image (transitions, speed, direction, etc.) Call up "File" menu and specify the drive and directory where your screen shots are located.

SED is ready to write the first version of your script for you. Back at the menu bar, you choose "Special", then "Auto-build", and pick the option "step" (effects are assigned in the order they occur in the list of screen effects), so you can see examples of all the effects in order. A script is automatically generated containing all of your picture files.

To get a sneak preview your show, select "View", then choose "Script" to see the whole show. Some of the pictures hop by so fast you can hardly see them, and others have strange effects you don't like. You select "print" from the file menu and print a copy of this script so you can make notes in the margin as you're viewing the show.

The first script-doctoring you do is to put the word "Key" in the time column for each screen. This will let you control the pace. Like the button control for a slide projector, the image will change only when you press a key. You will probably want to change to an automatic timing factor for some of the pictures later, but for now you want to be able to do "freeze framing" for script editing purposes.

Next, you will want to change all or most of the transition effects which auto-build arbitrarily assigned. Transition effects are the way in which the picture emerges on the screen and replaces the prior one.

Here are some guidelines for visually effective transitions.

"Box in" for framed pictures. The image starts at the edges and grows inward.

"Box out" for centered objects. The image starts in the middle and grows outward.

"Wipe down" for text. The lines appear in sequence, starting from the top.

"Scroll up" for continuous-slide effect. It looks like you're "panning" down through one long image.

"Scroll right" for moving-object effect. The picture moves across the screen and stops when it fills the frame.

"Fade" for dissolve/emerge effect.

"V-split" for curtain opening/closing effect.

"H-split" for blind raising/lowering effect.

"Replace" for quick change or cartoon animation. Make your transition changes and select "View" to see the current version in action.

There's an annoying problem which can occur during slow transitions. While the new picture is replacing the old, the previous image changes color to match the palette of the new one. To get rid of this distraction, insert a "clear" instruction between the offending parties. To do this, select "Edit", then "Insert Row". An empty row is added at the cursor position, and you type "clear" in the picture column and hit RETURN. The rest of the row will be filled-in with the appropriate default information. That solves the problem.

You now have a nice presentable show, so you save it.

GETTING FANCY

Now that you have the basic plain vanilla version of your show in the can, you can think about trying out some George Lucas special effects. *Show Partner* lets you do "animation" involving only parts of the screen. Over a background image, you could have words appear or disappear. A message box can be superimposed on a screen. Objects can move or blink. A picture can grow incrementally with various elements being added until the image is complete.

The way you achieve these happenings is with "partial picture effects"—changes involving only part of the screen. You first load GED, select "Quit" from the file menu, then "Quit and Stay Resident" to put it in the background and keep it handy to create the partial-picture images for some of your animation effects. Next you load SED and call up your previous script and go to work.

Suppose you want to change the title screen so that an empty frame appears first, then the title "fades" in. You put your cursor on the row of the script containing the title picture, then you select SPECIAL on the menu, then "GED" to hop down into the Graphics Editor. With GED displaying your title screen, you mark a block around the lettering and "Erase" it, leaving an empty frame. You save this and "Quit", then "Quit and Stay Resident", which puts you back in SED.

On the script form you add a row above your original title and insert the name of the empty frame, specifying the "Box" effect, and the "In" direction. Next you want to use your original title screen for just a partial picture effect, so you put your cursor on that row, call up the SPECIAL menu, and choose "Clip Block". You make a box around the part of the picture you want to save (in this case, the words of the title) and press INS. You now see the picture of the empty frame with a box representing your clipped image. Move the box, if necessary, to the target destination for the lettering, and press INS. Back on the script form, you change the effect for your partial picture to "fade". When you view this, you can see the frame growing inward, then the title emerges from out of the mist—much more subtle and dramatic than what you had before!

Perhaps you're not entirely happy with your bullet chart—the lettering comes at you faster than your reading speed. To slow things down, you "Clip" each line and have each clipped block appear in turn, starting with the top line and adding each succeeding line down the list.

Your prosaic bar chart could use a little dramatization, so you decide to add a moving arrow, followed by a message in a box. You insert into your script, right under the bar chart, the name of a picture file from the Clip/Art disk which contains drawings of arrows, and "Clip" one of them. Then you set the destination to the top of one of your bars, and set the effect for "x-move". This makes the arrow move across the screen from its original location to the target without erasing anything in its path. Now, for the final embellishment, you drop down into GED, draw a small frame, and write your caption in it. Get back into SED and add another row to the script to handle the boxed message. Clip it, specify the the place where you want to superimpose it on the chart, and give it the "Wipe, down" effect. You now have a bar chart which makes its point with a vengeance!

You view the whole show, and decide that your movie is ready to open in your conference-room theater. You save the latest version of the script under a different name from your fail-safe version, and you are ready for your audience.

If you were making a demo or tutorial instead of a presentation, you would want to take advantage of *Show Partner*'s programmability features. SED will let you include branching logic in the script, so you can create menus which will allow the viewer to select what portions of the show will be displayed. You could also include an instruction to do circular looping for a continuously-running demo or sales pitch.

CONCLUSION

You can save yourself a lot of time and frustration by thinking through the project beforehand. You will find it helpful and encouraging to get a simple but presentable version of your show up and running quickly, and then add your fancy extra touches to flesh it out.

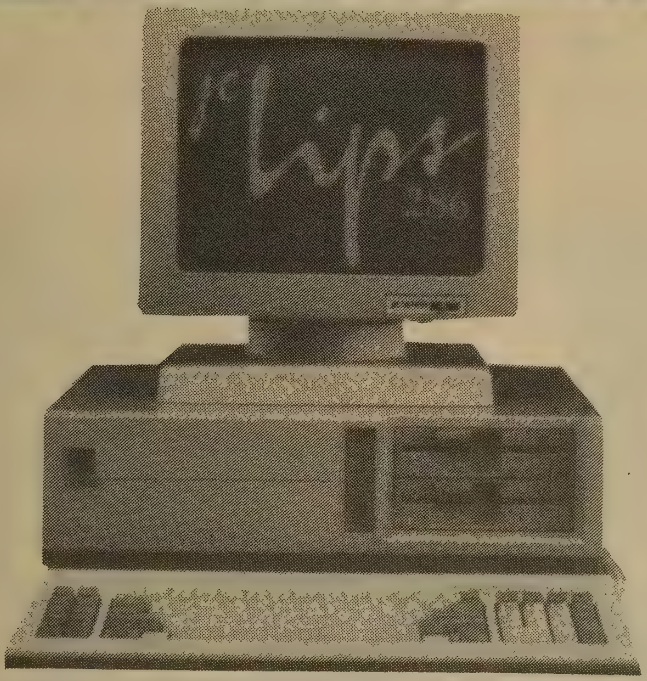
Show Partner is an amazing bargain and lots of fun as well. I think you will appreciate being liberated from the restrictions of hard-copy output for your computer graphics applications and enjoy adding the new dimension of animation to your screen displays. See you at the movies!

(*Show Partner*, v. 2.0 is published by Brightbill Roberts & Co., Ltd., 120 East Washington St, Suite 421, Syracuse, NY 13202. Phone 315/ 474-3400. It runs on IBM PCs, ATs and equivalent hardware with CGA, EGA or Hercules graphics adapters.) ☐

XELTEK

COMPUTER PRODUCTS

FORTUNE 100 QUALITY



FEATURES

- 8/10 MHz Clock Speed
- Phoenix BIOS
- 512K Memory, expandable to 1MB
- FCC Class B, UL, CSA, TUV approved
- 1.2 MB Floppy with Controller
- 200W Power Supply (110/220V)
- Mono Graphic Bd.
- 14″ inch TTL Monitor (110/220V)
- AT Style Keyboard (MAXI switch)
- Hardware reset switch
- Complete Operation manual
- Set Up Utility S/W
- Small Foot Print
- 1 Year Warranty

$1195

OPTIONS

• Dual Floppy System	$1285
• Hard Disk System	1595
• EGA System	1595
• Color System	1390

EXP XT SYSTEMS

FCC Class B Approved
640K Turbo, 1 floppy, Mono Graphic, 1S, 1P, Game, Clock, Amber Monitor, AT Style K.B., AT Style Case, 150W P.S.

Only $585

• Dual Floppy System	$675
• 20MB Hard Disk System	950
• Color System	795
• EGA System	1085
• Portable System	875

(Portable system comes with Mono & Color graphic board)

MONTHLY SPECIAL

3.5 HDD w/cntr (48MB 62 MS FUJI)	$595
104 MB HDD w/cntr (CDC, 22 MS)	1195
60 MB tape w/cntr	659
14″ Mono Monitor	109
EGA Card w/Monitor	544

PRINTERS

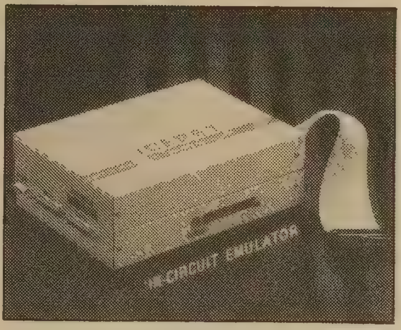
Citizen 120D (Free cable, Paper, S/W)	$189
Brother HR10 (Daisywheel Tractor)	179

M-F: 8-7 PM Sat: 10-4 PM
CA residents add sales tax
UPS Shipping daily
No Surcharge for Credit Card
6 months warranty

XT & AT Add On card
Available Low Cost
CALL

ENGINEERING PRODUCTS

INCIRCUIT EMULATOR



Model: ICEPET Z80
*Also available 6502 model

- 6MHz clock operation
- Two RS232 interfaced
- 8K byte emulation two 4K byte memory mapping
- Expandable to 32K byte, two 16K byte memory mapping
- Backward, forward, trace point execution
- Assembly, Disassembly function
- Real Time emulation
- Two hardware, One software breakpoint
- Simple command set, easy to use

$1895

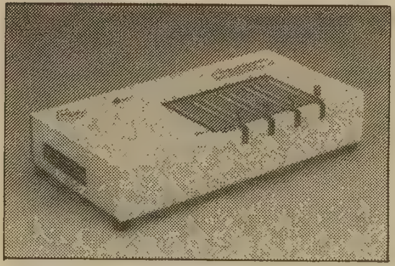
PROGRAMMING TOOLS

PAP-01

1. PAL PROGRAMMER

- Supports 20-24 pin MMI, TI, NS PALS
- Menu driven S/W
- Short circuit protection
- Intelligent programming
- Very high yield
- Support JEDEC format

$395

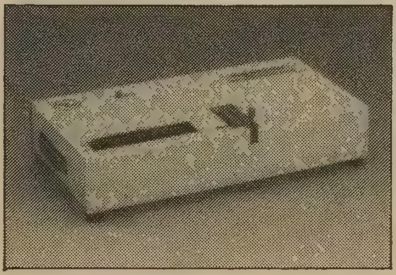


EPP-04

2. EPROM PROGRAMMER

- Supports all 24-32 pin EPROM, 27(C) 16-27 (0) 512, 27513, 271000, 27301, 2816-7A, 2864A, etc.
- Very fast, 27C256 only 30 Sec
- Intelligent Vpp (5, 12.5, 12.75, 13,21,25V)
- 1,4,8 sockets available

$195



BPP-01

3. BPROM PROGRAMMER

- Supports all MMI, NS, TI1 Signetics
- All 16-20 pins, 63S080-63S1640 74S188-74S573, 87184-87S19SA 24S10-245A81, 82S23-825185
- Menu driven s/w

$395

ENGINEERING TOOLS

1. 8741/42/48/49 Programmer	$195
2. TTL IC/Memory Tester	195
3. Expansion Slot For PC XT/AT	69
4. 68000 Single Board Computer	295

XELTEK
Tel (408) 727-6995
FAX (408) 727-6996

473 Sapena Ct.
Suite 24
Santa Clara, CA 95054

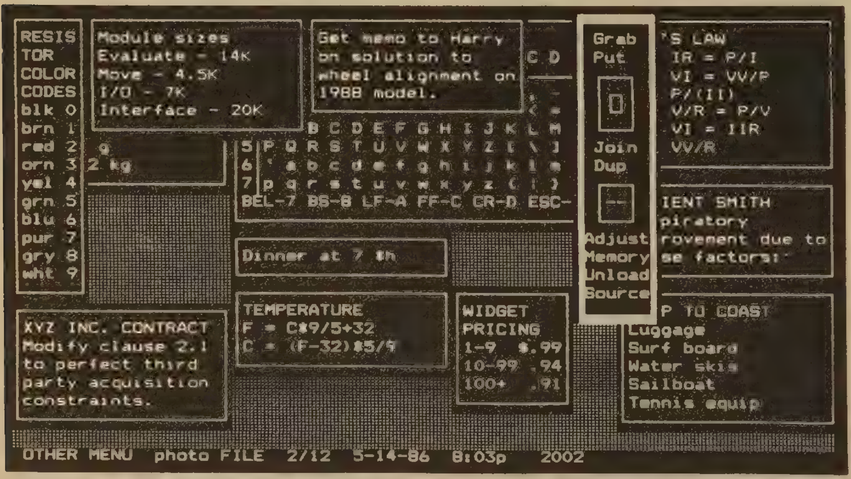
THE THOUGHT ASSISTERS:

Software That Helps You Think

By Birrell Walsh

Magazines are full of ads for products that optimize your computer. Few of them work directly to optimize a much more powerful tool—the human mind. But there's a new family of software that's intended to amplify and sharpen thinking. This software provides utilities to assist in remembering, ordering, and connecting information. Unlike "Expert Systems," these products are intended to help you rather than replace you. They help you to keep on top of all the information that must be dealt with each day—and even to be creative with it.

TORNADO NOTES—THE ELECTRONIC SCRAP OF PAPER



```
RESIS   Module sizes         Get memo to Harry        Grab  'S LAW
TOR     Evaluate - 14K       on solution to      C D  Put    IR = P/I
COLOR   Move - 4.5K          wheel alignment on              VI = VV/P
CODES   I/O - 7K             1988 model.                     P/(II)
blk 0   Interface - 20K                                      V/R = P/V
brn 1                        B C D E F G H I J K L M         VI = IIR
red 2    g                5 P Q R S T U V W X Y Z [ \ ]  Join  VV/R
orn 3   2 kg              6 ` a b c d e f g h i j k l m  Dup
yel 4                     7 p q r s t u v w x y z { | }
grn 5                     BEL-7 BS-8 LF-A FF-C CR-D ESC-      IENT SMITH
blu 6                                                         piratory
pur 7                     Dinner at 7 th            Adjust  rovement due to
gry 8                                               Memory  se factors:
wht 9                                               Unload
                                                    Source
XYZ INC. CONTRACT         TEMPERATURE     WIDGET          P TO COAST
Modify clause 2.1         F = C*9/5+32    PRICING         Luggage
to perfect third          C = (F-32)*5/9  1-9   $.99      Surf board
party acquisition                         10-99  .94      Water skis
constraints.                              100+   .91      Sailboat
                                                          Tennis equip
OTHER MENU  photo FILE  2/12  5-14-86  8:03p   2002
```

Tornado Notes is a RAM-resident package that lets you place messages to yourself anywhere within your application documents.

Here's the piece of paper that the computer was going to eliminate from our desks. It's for making a small note, a reminder, for capturing a piece of information without having to open a word-processor. *Tornado Notes* is a RAM resident program which lives behind whatever foreground program you choose. When you invoke it with a "hot-key," it takes over the screen to show you a screen with notes on it. You can write a note, edit a note, save a note to file or save all the notes to file. It's very much like a desktop covered with random papers. But *Tornado Notes* has the special ability to sift through all the notes and extract those which have in them any string which you choose. You might have a stack of 150 notes, and now you want to find all those which have to do with "backordered" goods. To do so you type "g", which brings a request from *Tornado Notes* for a "key" —the string you want to match. Showing on the screen as you do this are small squares. Each represents one of the notes in the stack. As you type the letters of the key-string "backorder", the squares wink out if they can no longer match your string. You may not need to type all the letters of the key in order to retrieve these notes containing the word "backorder".

Because *Tornado Notes* is RAM resident, memory is important. Among the various RAM-resident utilities, *Tornado Notes* uses the smallest amount of RAM—60K or so will hold the program and a reasonable colleciton of notes. It is possible to expand the size of the note collection to 50K, which will make the program use just over 100K.

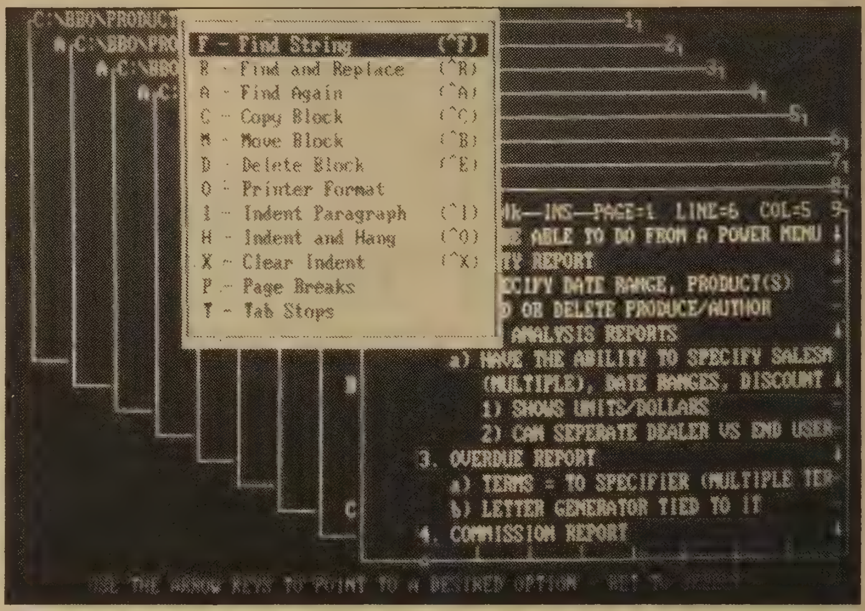
The price of that small memory usage is that a number of the facilities are simple in *Tornado Notes*. The note editor is elementary. The printing facilities are adequate, but again simple. The program can take information from the foreground program, but it must take the entire screen. The user can also move information from notes to the foreground program.

Given these restrictions, though, you can do a great deal with *Tornado Notes:*

You can take freeform notes or use pre-prepared forms—like telephone message pads—which *Tornado Notes* allows you to design. Or interrupt what you're doing to take a message: "Joe called from Bali. Please call him." Or take notes about something found in the foreground program—"Joe says this product is uncommon in Bali. Is it?" The notes are not associated with a specific point in the foreground program, as are the notes made with a product like *SmartNotes*.

Tornado Notes can be used to make mixed piles of records. I use it for miscellaneous small memos to myself about software. I also use it to keep track of expenses. To be able to retrieve the expenses quickly, I put "*x" at the beginning of each expense note.

Tornado Notes' use of keywords is a virtue and a vice. If for any reason you forget a keyword, you'll probably have a hard time finding the note. In order to use *Tornado Notes* most effectively, you must keep the keywords in mind—or in another note. Without that set of keys, *Tornado Notes* can be as much of a mess as the desktop it simulates.



```
C:\BBO\PRODUC
 A C:\BBO\PRO
  A C:\BBO
   A C:
       lk—INS—PAGE=1  LINE=6  COL=5
        ABLE TO DO FROM A POWER MENU
       TY REPORT
       ECIFY DATE RANGE, PRODUCT(S)
       D OR DELETE PRODUCE/AUTHOR
         ANALYSIS REPORTS
      a) HAVE THE ABILITY TO SPECIFY SALESM
         (MULTIPLE), DATE RANGES, DISCOUNT
         1) SHOWS UNITS/DOLLARS
         2) CAN SEPERATE DEALER US END USER
   3. OVERDUE REPORT
      a) TERMS = TO SPECIFIER (MULTIPLE TER
      b) LETTER GENERATOR TIED TO IT
   4. COMMISSION REPORT
```

PC Outline uses a simple but flexible structure to help you get your thoughts organized.

PC OUTLINE—CLARITY AND FLEXIBILITY

My outline program is the one piece of software I use daily. The "to do" list is in it for the week and the weekend. In another outline I keep names and addresses. It is so convenient that I also use it for recipes. The word processing is so good that I use it to write articles.

In short, it is the organizing software that the computer was going to bring to us. It works bacause it obeys the one rule for an outliner: Be Clear.

Outliners use the now-familiar structure of topics and sub-topics, with the ability to hide information in the topics or reveal it as you see fit. You can get an overview, with only the top headings visible, or you can examine all the details by revealing the subheadings and their accompanying text.

There are a number of good outlining products on the market. But as far as I'm concerned, after working with several of them, the best, the most flexible, the most friendly, and the *clearest* is *PC Outline*, from Brown Bag Software.

PC Outline has adopted the *Lotus 1-2-3* scheme for commands. Each command begins with a "/". When you type "/", the menu at the top of the display becomes active, and lets you know it's active by reversing video. You can choose from the nine commands by typing the initial letter, such as "d" for "Display", or by moving the cursor to it with the arrow keys. As you choose a command, a drop-down menu appears with sub-choices. Each of those can be chosen by first letter or by moving the cursor with the up and down arrows. These menus appear and disappear so fast that they are unobtrusive. They add to the clarity of the command structure by making your choices visible.

UNIQ AT COMPATIBLE 10MHZ, "0" WAIT STATE SI = 11.5

UNIQ-286 BASIC SYSTEM

AS LOW AS...

$1095

FEATURES:
- 80286-10CPU
- 6/10 MHZ SPEED
- NORTON UTILITY SI = 11.5
- LANDMARK SPEED TEST = 13.2 MHZ
- ZERO AND ONE WAIT STATE
- HARDWARE AND SOFTWARE SWITCHABLE
- 512K HIGH SPEED (100 NS) DRAM ON BOARD EXPANDABLE TO 640K OR IMB
- 5 CHIP AND TECHNOLOGY SETS ON BOARD LOW POWER CONSUMPTION & HIGH PERFORMANCE
- RECHARGEABLE ON BOARD BATTERY
- UL AND CSA APPROVED POWER SUPPLY
- 8 SLOTS
- AT STYLE KEYBOARD
- LEGAL BIOS
- 1.2 MB TEAC DRIVE
- HARD DISK & FLOPPY DRIVE CONTROLLER
- ASSEMBLED AND TESTED
- FCC CLASS B APPROVED
- HARD COVER USER'S MANUAL
- ONE YEAR WARRANTY

RUN CAD SOFTWARES & ALL POPULAR SOFTWARES

WE BEAT THEM ALL!!

UNIQ-286 SI = 11.5
("0" WAIT STATE)

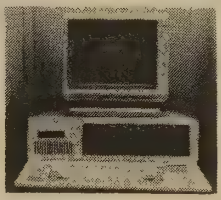
Computer	Norton Sysinfo Speed
IBM PC AT	7.7
EPSON EQUITY III	7.7
COMPAQ DESKPRO 286	7.7
AT&T PC 6300 PLUS (6 MHZ only)	7.2
TI BUSINESS PRO	5.7
SPERRY PCAT	8.9
TANDON PCA-20	7.7
ZENITH Z-200	6.6
WYSEpc 286	9.2
ALR PC 2/286	7.4
ITT XTRA (0 WAIT STATE)	9.2
KAMERMAN TCS-7000	7.5

Information Based on BYTE Magazine, January 1987

UNIQ TURBO XT 8/4.77 MHZ

- 640 KB on Board
- 2 360KB Floppy Drives
- Parallel, Serial, Clock, Game
- AT Style Keyboard
- 8 Slots Slide in Case, w/Power Supply
- Monographic Card w/PRT Port
- High-Res Mono Monitor w/Base
- One Year Warranty

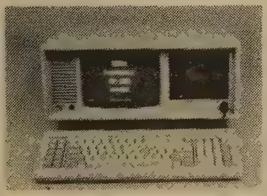
$695



UNIQ TURBO XT 10/4.77 MHZ

- 640 KB on Board
- 2 360KB Floppy Drives
- Parallel, Serial, Clock, Game
- AT Style Keyboard
- 8 Slots Slide in Case, w/Power Supply
- Monographic Card w/PRT Port
- High-Res Mono Monitor w/Base
- One Year Warranty

$795



UNIQ PORTABLE AT-286 10MHZ "0" WAIT STATE

- Norton Utility = 11.5
- 80286-10 CPU
- 10MHZ & 6MHZ Speed
- Hardware/Software Switchable
- AT Style Keyboard
- 8 Slots
- 1.2 MB Floppy Drive (TEAC)
- 640 KB (Expandable to IMB)
- Hard Disk & Floppy Drive Controller
- Serial, Parallel Port
- Monographic or Color Graphic Card
- High-Res Mono Monitor (Dual Frequency Monitor)
- Hard Cover User Manual
- One Year Warranty

$1595

UNIQ PORTABLE TURBO XT

- 4.77MHZ/8MHZ Speed
- 640KB on Motherboard
- 8 Slots, Power Supply
- AT Style Keyboard
- 2 360KB Floppy Drive
- Serial, Parallel, Game Clock w/Calendar
- Mono Graphic or Color Graphic Card
- High-Res Mono Monitor (Dual Frequency Monitor)
- One Year Warranty

$895

OPTIMOUSE/DR HALO	$99
1200B MODEM	$95
2400B MODEM	CALL
EGA ADAPTER	$175
EMS 2MB MEMORY EXPANSION BOARD (0K) (GOOD FOR 10 MHZ AT)	$145
CASPER AMBER	$85
CASPER EGA MONITOR	$385
CASPER COLOR MONITOR	$285
NEC MULTI SYNC	CALL
QUIMAX DM-14	$135
20MB HARD DISK KIT	CALL
10MB HARD DISK KIT	CALL
MICROSCIENCE 40MB (28ms)	CALL
SEAGATE 30MB (38ms)	CALL
3½ INCH FLOPPY DRIVE	CALL
60/80/120MB HARD DISK	CALL
PRINTER	CALL

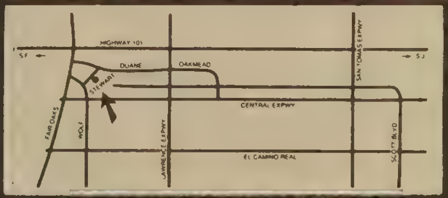
DEALER INQUIRIES WELCOME

PAYLESS PC CENTER

OWNED AND RUN BY ENGINEERS
A DIVISION OF UNIQ TECHNOLOGY, INC (UTI)

(408) 736-8588

M-F 9-7
SAT 10-5



1120 STEWART, SUITE G
SUNNYVALE, CA 94086

OWNED AND RUN BY ENGINEERS

The simplicity of the commands mean that every command in the system is available with a "/" and no more than two or three letters. The menus mean that the commands you have forgotten are listed in front of your eyes. It is almost never necessary to go to the manual with *PC Outline*. If you don't like the way a command works, you can change it with the built-in macro facility.

The clarity of *PC Outline*'s commands is matched by the clarity of its display. An outline made in *PC Outline* is easy to view and understand. The working area in *PC Outline* is surrounded by a window-frame which separates it from the command line at the top, and a message-bar at the bottom. The bottom of the frame shows a ruler with left and right margins and a tick-mark every five characters. On the right side are small marks that indicate if there are hidden topics or text.

All outliners have the ability to sort outline topics in alphabetical or ASCII order, ascending or descending. But *PC Outline* provides a way to sort outline topics on many different criteria. If you include a word or number marked by ":", you can then instruct *PC Outline* to sort on the second, third or later field. For instance, you can define dates in the "year-month-day" format so that "March 12, 1987" becomes "87-03-12", and can be sorted alphabetically. Then make a list of companies you have talked to recently:

A. Prospects . . Last call . . Phone Number
1. **Adams Electric :87-03-05 :**
   (408) 355-1718
   Talk to Joe Adams, President.
2. **Tantrum Tech :86-12-05 :**
   (415) 399-7819
   Need US source of chips.
3. **Callosa Corp. :87-05-12 :**
   (303) 589-7718

You can sort this group by company name, by date of last contact, or by telephone number. The sort-on-many-fields capability allows *PC Outline* to be a capable database as well as an outliner.

You can choose to number topics with "A., 1., a., 1 . . . ", "1.1, 1.1.1", "bullets" or no number at all. You can move paragraphs to any position, regardless of the indentation scheme. You can also use *PC Outline* as a word processor with no trace of outlines and indentation.

You can have up to nine outlines open on the screen—each in its own window—and you can move information among them. You can keep an address list in one outline, and copy an address from that outline into a to-do list in another outline. Each outline can be opened and closed separately, and the windows can be moved and resized separately. Because the product can be used as a database and as a word processor, the multiple windows allow you to do most of your business in *PC Outline* using the same commands and file formats.

PC Outline can be used as a stand-alone or a RAM-resident program. It takes 85K of memory as a stand-alone, and 120K as a resident program, with 64K reserved for outlines.

Finally, the manual is well-written. Because the program is so self-explanatory, much of the manual can be used to give you ideas for new uses for the product. It is also the most detailed manual in the field.

This outliner is very, very good—it's an example of how to do things right. And at $89.95, it's cheap. If you need clarity in your work, *PC Outline* is the tool for you.

HOUDINI—FINDING THE LINKS

All outliners are structured for "top-down thinking." The assumption is hierarchical — one major topic, has sub-headings, which have sub-sub-headings. Out in the real world things are a lot more complicated, and it would be good to have a program to help trace those complications. Some outliners have developed a scheme called "cloning," which allows the same topic to appear in more than one place. Any change made to it in one location is copied to all the others. But Reliance/Maxthink has made a product with a whole new approach.

Houdini is a "system processor" which allows the user to connect any item to many inputs and many outputs. By allowing this many-to-many connection *Houdini* lets people explore all sorts of new issues with the help of their computers.

Tracking ancestors seems simple enough, but it is almost too much for an outline processor. Each person has two parents, and each of those has two others, and so on into the past. Is little Jenny the daughter of Clyde or of Helen? In an outline processor, you would have to assign each descendent to one of their parents, or use the awkward "cloning" device. With *Houdini*, you can quickly list parents (as "input") and children (as "output").

An outliner with cloning will let you (with difficulty) keep track of ancestors and descendents. No outliner can deal with looping connections. The chicken → egg → chicken loop will defeat them all. *Houdini* lets you trace as many looping connections as you wish. *Houdini* is the first product that is specifically designed to explore complex networks. As the first, it also the inventor of a set of new techniques.

You can connect one "node"—*Houdini's* word for a topic—to another by typing its name on the other's input or output list. You can also make the list of all nodes appear, and check off those which should be connected. *Houdini* can automatically find which links are common to a number of nodes, and which nodes have the same inputs and outputs.

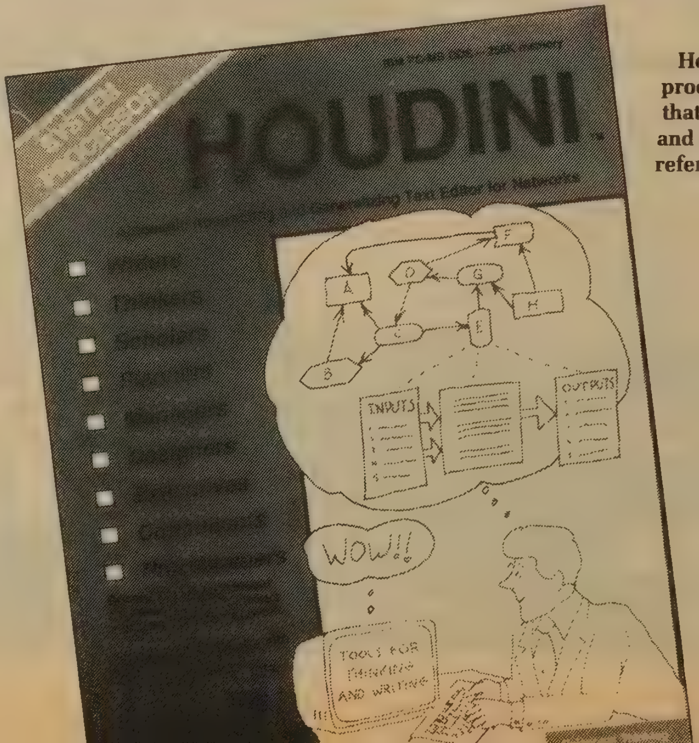
These connections need to be displayed, and *Houdini* provides different ways to show them. In the "Link" display, you can show the node on one side, and all the inputs or all the outputs to which the node is linked on the other side. In the "View" display, you can see all the inputs and all the outputs of a given node. And *Houdini* also uses the HIPO ("Hierarchy plus Inputs, Outputs and Processing") format which IBM has invented.

I used *Houdini* one evening with a client who was attempting to classify her skills for a career change. She wanted to find work that would express as many of her skills and values as possible. She knew her skills and her values, and she needed to gather them into usable groups. *Houdini's* ability to connect different nodes allowed her to note the connections that were obvious. But because *Houdini* is flexible and quick, she was able to try out new patterns of connection much faster than she could have done with an outline processor or paper and pencil. The dissatisfaction she felt with her first clusterings led to experiments with new groupings of skills and values. In the end, she came up with a two-headed career plan. An outliner's structure, with its one-heading-for-many-subheadings, would have discouraged the unusual combination she created.

When you buy *Houdini* from Reliance/Maxthink, you are not buying just the product. You get a subscription to an occasional newsletter with President Neil Larsen's ruminations on thinking. Larsen believes that a program's purpose is not to automate thinking, but to facilitate and enable it. He also feels that a software product can get around the copy-protection/piracy issue by frequent low-cost upgrades. You can get updates to *Maxthink* and *Houdini* for $20, and the newsletters let you know what new features have been included. Larsen is available and eager to talk with users, because they tell him what changes they want and how they use the product. He makes the changes, and lets other users know about updates and novel applications through the newspaper.

Houdini's greatest deficiency is that it does not make bit-mapped graphic diagrams of connections. It is a text-based system, usable on any IBM-compatible system, with or without a graphics card. Larsen points out that *Houdini* can track up to 8000 connections among 1000 nodes, and that no graphic program can show that. And for all of that, it would be nice to see the connections so the right brain could get in on the work. Future updates may make that possible, and I for one have already sent in $20 to receive the next one.

Tornado Notes, *PC Outline* and *Houdini* are the cutting edge of an application category that is not yet fully appreciated. Software that helps you think is the most useful product you can buy—if it works. These products do, but they are only a beginning. Thought-assisting software is a daunting field for psychologists and thinkers-about-thinking to work in, because favorite ideas receive a very practical test when they are embodied in software: they work, or they don't. The field is wide open for new developments and new developers who are willing to face the test. ☐


HOUDINI
Generating Text Editor for Networks
F
A
D
G
H
C
E
B
INPUTS
OUTPUTS
WOW!!
TOOLS FOR THINKING AND WRITING

Houdini is system processing software that organizes ideas and text into a cross-referenced network.

RESOURCES

Tornado Notes
$49.95
POB 174
100 2nd Street
Hackensack NJ 07062
(800) 342-5930

PC Outline
$89.95
Brown Bag Software
2155 South Bascom Avenue
Suite 114
Campbell CA 95008
(800) 323-5335
(408) 559-4545

Houdini
$89.00
Reliance/Maxthink
230 Crocker Avenue
Piedmont CA 94610
(415) 428-0104

Copyright ©1987 by Birrell Walsh. All rights reserved.

Apple IIGS
Now Available
In Limited Supply

FRESH APPLES AT THE ATTIC!

$1699

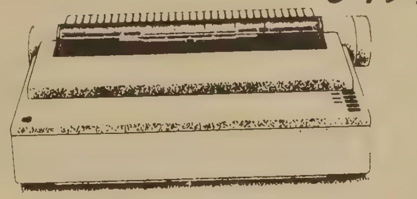
MACINTOSH PLUS

The Macintosh Personal Computer completes your office like no other computer.

In combination with an Apple Laserwriter or Imagewriter II, the Macintosh gives your business that personal, professional touch.

Pay over time with Attic credit!

LASERWRITER **$3799**



IMAGEWRITER II **$499**

Authorized Dealer

COME IN AND VISIT OUR MACINTOSH EXPERTS!

FRESH APPLES AVAILABLE IN THE PALO ALTO STORE ONLY!

LEADING EDGE®
AUTHORIZED RETAIL DEALER

The Leading Edge®
Model "D"
Personal Computer

Model L Modems Only $99

The Attic Leads the Way

30 MB System	**CALL**
20 MB System	**CALL**
2 FLOPPY System	**CALL**

NEW LOWER PRICES

All systems include 512K, Monitor, DOS 3.1

Leading Edge is a registered trademark of Leading Edge Hardware Products.
Model "D" is a trademark of Leading Edge Hardware Products.
Model "L" is a trademark of Leading Edge Hardware Products.

COMPUTER ATTIC

SAN FRANCISCO
217 Sansome Street 9–6 M–F
(Delivery Available) 9:30–6 W
(415) 398-4541 10–5 SAT

PALO ALTO
382 University Avenue 9–6 M–F
(415) 322-0639 9:30–6 W
10–6 SAT

Apple and Apple logo are registered trademarks of Apple Computer Inc. Macintosh is a registered trademark of Apple Computer Inc. Laserwriter and Imagewriter II are registered trademarks of Apple Computer Inc.

CORPORATE ACCOUNTS
PLEASE CONTACT
(415)322-0683
(Ask for Bill)

Software would like you BUSINESS

To order these fine products and many more contact the following Software Resource dealers:

Granite Systems (415) 284-2535
3702 Mt. Diablo, Ste 165, Lafayette, CA 94549

Dynamic Computer Systems (415) 866-8600
12919 Alcosta Blvd., San Ramon, CA 94583

Micro Age (415) [illegible]-1419
1417 Bridgeway, Sausalito, CA 94965

Monarch Computers (415) 526-2241
963-C San Pablo Ave., Albany, CA 94706

Kings Office Products (707) 462-1462
425 S. Orchard Ave., Ukiah, CA 94587

Micro Business Systems (209) 432-9446
[illegible] N. [illegible], Fresno, CA 93711

Monterey Bay Comp. Works (408) 899-3177
1501 Fremont Blvd., Seaside, CA 93955

System Works (415) 777-1989
525 3rd St. #203, S.F., CA 94107

Thrill Co. (415) 495-[illegible]
590 Folsom, S.F., CA 94105

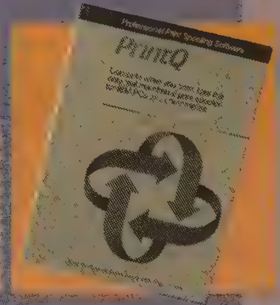
All Trademarks Acknowledged

$150. SUGGESTED LIST

Norton Utilities Advanced Ed.

Data Recovery Disk Management. All the utility, speed and ease-of-use we're famous for. Plus all the technical features you've been asking for. Loaded with new [illegible] Power, and enhanced version of the main Norton Utilities program and more brand-new specialized programs found only in the Advanced Edition. The Advanced Edition includes: SD-Speed Disk, rearranges the logical structure of your hard disk. FR-Format Recover, restores data lost from reformatting a hard disk, new maintenance mode for badly damaged disks. Directory Editor. File Allocation Table Editor. Partition Table Editor.

Peter Norton COMPUTING



$89. SUGGESTED LIST

PrintQ

Finally, you can access application programs while you print! PrintQ is an easy-to-use, professional-quality print spooler with mainframe power. PrintQ increases your PC's productivity so dramatically, it's like having an extra PC at your command. Only better. PrintQ's features include: Storing reports on disk not main memory, therefore data can't be lost during a power failure. It keeps each report separate so each can be controlled differently. A "Pop-Up" status display shows you what is being printed, at any time. Then return to your program precisely where you left it.

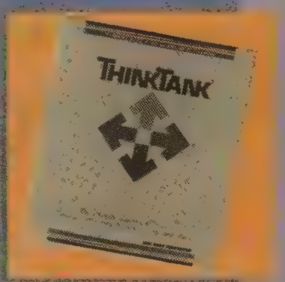
SDI Software Directions, Inc.

$169. SUGGESTED LIST

Fast88 with V20 Option

The most cost effective way to increase the performance of your PC or PC-XT. Fast88 increases true CPU speed by up to 80% and it is 100% software compatible to protect your software investment. In many cases Fast88 gives your current computer the same usable performance as newer computers or PC accelerators costing many times more. Features include: 8088-2 CPU; High Performance V-20 optional; Expansion slot not required; Full compatibility with 8087-2 numeric data processor; Full compatibility with Above Board extended memories; Easy installation. 1 year warranty.

MICROSPEED INCORPORATED



$195. SUGGESTED LIST

ThinkTank

The ultimate outline processor—from powerful ideas to dynamic business plans. ThinkTank is the first software program designed to process ideas. ThinkTank's flexible outline format lets you organize your thoughts, turn inspiration into strategic planning and transform rough working ideas into full-fledged proposals. Create an outline and watch your ideas take shape. You can use the "mark" and "gather" features to collect headlines and start a whole new outline and the "hoist" command to focus your attention on details. ThinkTank turns thought into reality, ideas into written plans. Brainpower into business power.

LIVING VIDEOTEXT

$169. SUGGESTED LIST

TakeTwo

"Just put up your feet, take a 2 minute break, and let TakeTwo do the rest." TakeTwo is a quick, effortless backup system for information stored on hard disks. TakeTwo is entirely automatic: just type "T2" and TakeTwo does the rest. All you do is change the disks when prompted. Features include: Optional user configuration. Full screen color status displays. Complete records of backup history and files. Floppy disk formatting. DOS readable backup disks. Simple to use restore and rebuild functions. Ready-to-run right from the package.

United Software Security

$395. SUGGESTED LIST

Genifer

Genifer is a dBase III application generator designed to create complete business applications. Genifer produces fully commented and well structured dBase III source code. Features include: dBase III versions supported; Genifer custom menu. Set up DOS directories for output, data, and skeletons. Programs and help screens. Generated Maintenance or Inquiry Programs. Up to 8 related files may be linked to the primary screen by "zoom". Generated Report Programs. Report, page and group headers/footers in addition to detail lines. Program Generation Technique

bytel corporation

Resource™
o meet their
PARTNERS

mputer Resource Center (415) 339-2544
7 Mountain Blvd., Oakland, CA 94611

mpicto (800) 867-1058
E Hamo Ave., S.F., CA 94109

scount Micro World Inc. (415) 492-8800
Paul Dr., #C, San Rafael, CA

crotech International (415) 658-1433
E Doyle St., #101, Emeryville, CA 94608

D Software (415) 644-3611
Dwight Way, Ste. 1A, Berkeley, CA 94710

plied Computer Technology (415) 499-6014
50 Northgate Dr. #275, San Rafael CA 94903

mputer Time (408) 732-2786
Lawrence Wy Ste 103 Sunnyvale, CA94086

mputown (415) 956-6086
0 Market #219, S.F., CA 94102

s Discount Computer Store (415) 283-1700
41 Golden Gate Wy., Lafayette, CA 94549

Brought to you by SOFTWARE RESOURCE

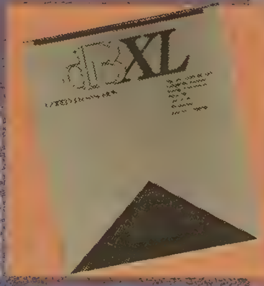
$295. SUGGESTED LIST

Silk

Silk stands alone as an extraordinary and ingenious spreadsheet product that will transport you to a new, higher level of power and performance. Our built-in utilities allow you to move easily between Lotus version 1A and 2.0. Silk has the only program that allows you to work in the program at the same time you are receiving help and by speaking your language not computerese you reduce errors, entry time and training. Other features include: Automatic recording of every keystroke on your hard disk; Up to seven colors; Alpha sheet writing; Nine types of graphs. The power is irresistable. The possibilities are endless.

DAYBREAK
TECHNOLOGIES INC

$169. SUGGESTED LIST

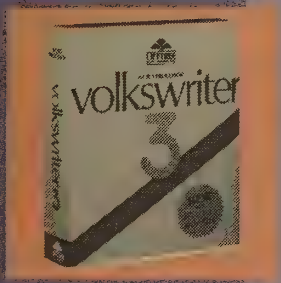


dBXL

dBXL is powerful enough for the most sophisticated data management applications, yet offers ease of use for the inexperienced computer user. It completely replaces dBASE III Plus, offering these advantages: Economical Power, dBXL is less than one fourth the cost of dBASE III Plus; Full dBASE III Plus compatibility; Unique On-line "Help" System; Windows, open up to 99; Ease of Use, dBXL's INTRO command does what the dBASE III Plus Assistant tried to do . . . Help the new user get started; Other Enhanced Features, a HELP keyword, faster indexing and smarter error messages.

WORDTECH SYSTEMS

$295. SUGGESTED LIST



Volkswriter 3

Fast, easy to use, powerful and very flexible. Volkswriter 3 is an admirable improvement of an already successful word processing product. The addition of math, spelling, and much improved style and layout capabilities bring this feature-rich MS-DOS program within range of the best in the field. Volkswriter 3 offers considerable—and sophisticated—enhancements and enough changes to clearly qualify this update as a major revision over Version 2.2. A strong, polished word processor that's in the running with the best in the business. Volkswriter remains a highly recommended program.

LIFETREE
SOFTWARE INC

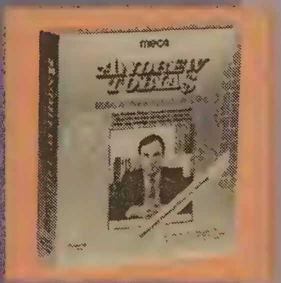
$99. SUGGESTED LIST

VP-Expert

Capture your expertise and free your time. Expert systems are a branch of artificial intelligence (AI) meant to approximate the complex reasoning processes of the human mind. VP-Expert adds an intelligent interface and a smart price, to put AI within the grasp of any computer user. Easy to create . . . Easy to use. VP-Expert provides a ready made "shell" and the tools you need to fill it with a knowledge base and "rules of thumb." Then, others can use your system simply by answering questions you've written. The power is irresistable. The possibilities are endless.

PAPERBACK
SOFTWARE

$199. SUGGESTED LIST

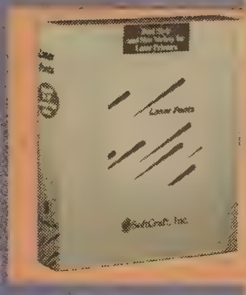


Managing Your Money

Integrated Personal Finance Package. Let Andrew Tobias become your personal financial advisor while your computer helps you manage your money effectively. It does the easy tasks such as, complete budgets and checkbook, to the not so easy tasks of recording and analyzing your investments, suggest optimal tax strategies, tallies realized and unrealized gains and losses. Allows for fiscal years and 5-year planning. Calculates tax shelter and rental property internal rates of return. Retirement planning, College Planning, Mortgage refinancing and does it all by keeping it simple, useful, integrated and organized.

meca®

$180. SUGGESTED LIST



Laser Fonts

Give your laser printer the power to produce stunning documents. With Laser Fonts you are no longer limited to the expensive fonts provided by HP and Canon; you can use any of the hundreds of fonts in the SoftCraft font library. Laser Font easily downloads SoftCraft and HP soft fonts to your Laser Printer, allowing the printer to print at maximum speed with up to 16 fonts per page. Font styles, including Roman, Sans Serif, Italic, Bold, Script, Old English and more in sizes from 6-24 points come standard.

SoftCraft, Inc.

SATURDAY AND SUNDAY, JUNE 6TH & 7TH

THE COMPUTER BARGAIN SHOW OF THE YEAR!

COMPUTER SUPERMARKET®

EVERY ITEM ON DISPLAY IS AVAILABLE FOR IMMEDIATE PURCHASE AT BARGAIN PRICES!

This show is literally a Supermarket of Personal Computer values. Top quality computer merchandise for Hobby, Business and Home use will be available at unbeatable prices. Over 150 exhibitors will be selling the largest variety of personal computer products ever assembled under one roof. Plan now to attend the Bay Area's finest Computer Bargain Show.

The Computer Supermarket is Saturday and Sunday, June 6th and 7th. Hours are from 10 am to 5 pm Saturday and 10 am to 4 pm Sunday. Regular admission is just $6, and children under 12 are Free. Take Hwy 101 to Hwy 92 West. Exit at Delaware and follow the signs to 2495 S. Delaware.

COMPUTER SUPERMARKET®

SAN MATEO COUNTY FAIRGROUNDS

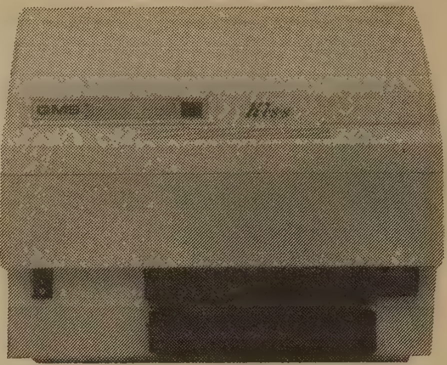
SAN MATEO, CALIFORNIA

$ SAVE $1 $
ON ADMISSION WITH THIS AD!
$ Duplicates from copy machines acceptable. $
Limit one ad per person

A MICROSHOWS PRODUCTION
For Further Information Call 415-340-9113

K•I•S•*Sable*

The QMS KISS™ Desktop Laser Printer



- Quiet, Versatile
- Works with any software. Emulates Epson FX80™, Diablo 630™, or Qume Sprint™ printers.
- Best features & fonts in a low-priced laser printer
- Simple to use, easy to upgrade

The QMS KISS is consistently picked by the computer press as the best low-priced laser printer. It combines the best features of a very fast letter-quality daisywheel printer and a very fast Epson dot-matrix graphics printer. Its built-in emulations and 13 resident fonts (with a capability to use downloadable fonts) make it ideal for word processing and general purpose printing. Upgrade options are available from The Printer Works to add memory and fonts for desktop publishing and Postscript capabilities. This is a low-priced laser printer that can grow.

"Buy from a knowledgeable source."

NATIONAL SERVICE CENTER

DIABLO IMPACT PRINTERS • CANON-ENGINE LASER PRINTERS • PRINTER PARTS AND ACCESSORIES

Call toll free for more information

THE PRINTER WORKS

3481 ARDEN RD. • HAYWARD, CA 94545

Local (415)887-6116
Calif. (800)225-6116
U.S.A. (800)235-6116

Factory Direct Sale For IBM AT Compatible Complete 10 MHz Systems

From $1399

XT Compatible Complete System

From $699

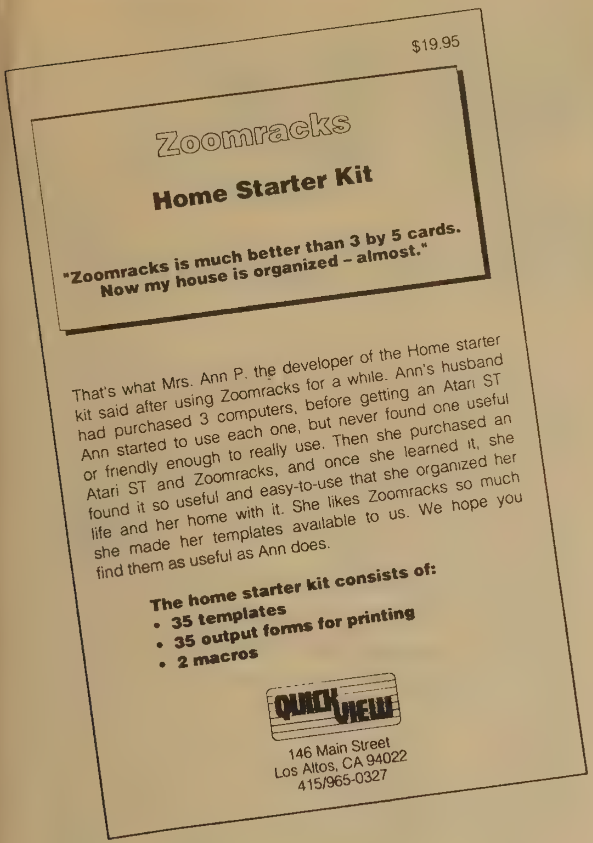
With One Year Warranty

Excellent 6/8 MHz main Board
With Outstanding Price Call Now!
BTC-5339 & 5060 Keyboard
Ask About our Special
Quantity Pricing

TSL Union Enterprises Inc.
1030 East Duane Ave.
Suite J
Sunnyvale, CA 94086

(408) 733-6037

Call for information and prices on our other products.



$19.95

Zoomracks

Home Starter Kit

"Zoomracks is much better than 3 by 5 cards. Now my house is organized – almost."

That's what Mrs. Ann P. the developer of the Home starter kit said after using Zoomracks for a while. Ann's husband had purchased 3 computers, before getting an Atari ST Ann started to use each one, but never found one useful or friendly enough to really use. Then she purchased an Atari ST and Zoomracks, and once she learned it, she found it so useful and easy-to-use that she organized her life and her home with it. She likes Zoomracks so much she made her templates available to us. We hope you find them as useful as Ann does.

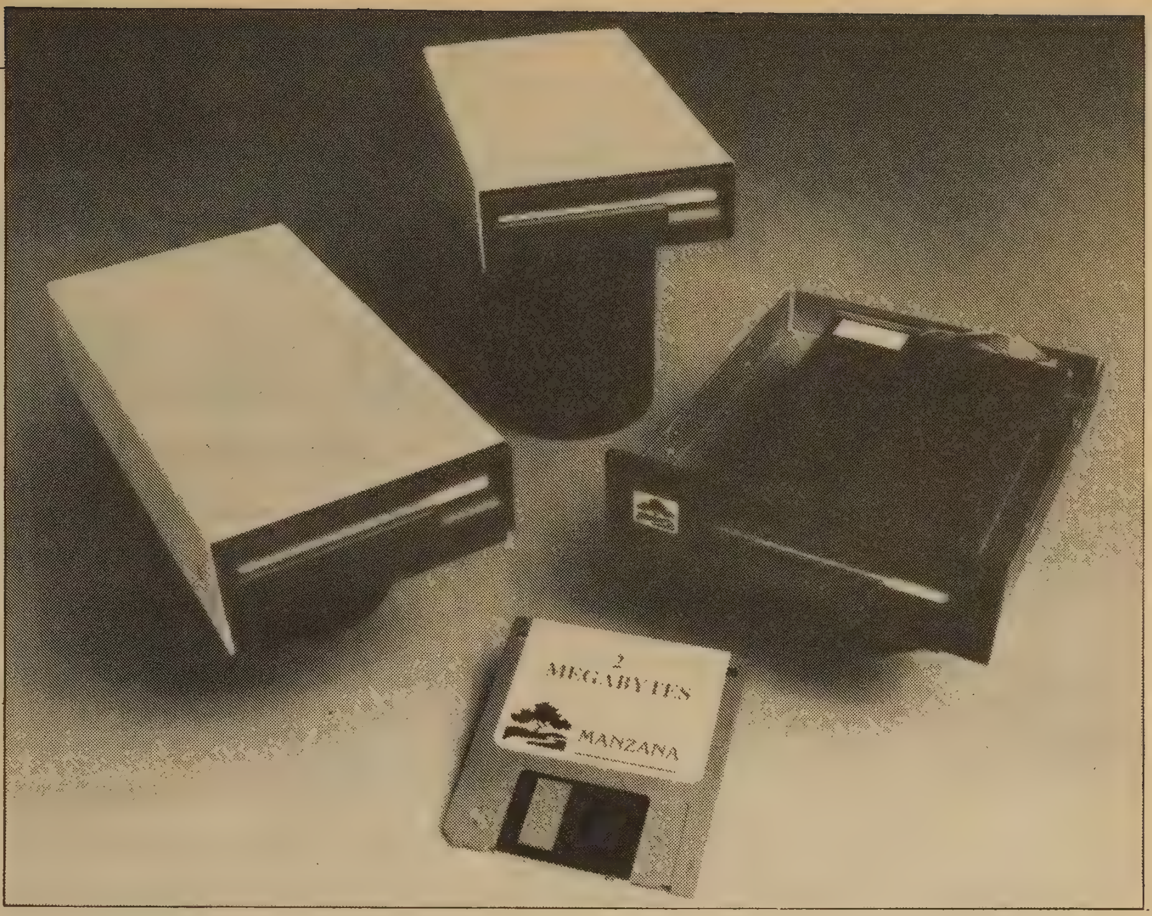
The home starter kit consists of:

- **35 templates**
- **35 output forms for printing**
- **2 macros**

QUICK VIEW
146 Main Street
Los Altos, CA 94022
415/965-0327

Two New Starter Kits For Zoomracks

Quick View has added *The Home Starter Kit* and *The Business Starter Kit* to its Zoomracks system. Each kit offers easily modifiable templates and macros that cover everything from employee records to clothes sizes. Each template comes with illustrative cards, a description of how to use it and at least one output for printing. ($19.95 each.) Quick View, 146 Main Street, Los Altos, CA 94022. (415) 965-0327.



3.5″ Floppy Drive System For 80286 and 80386

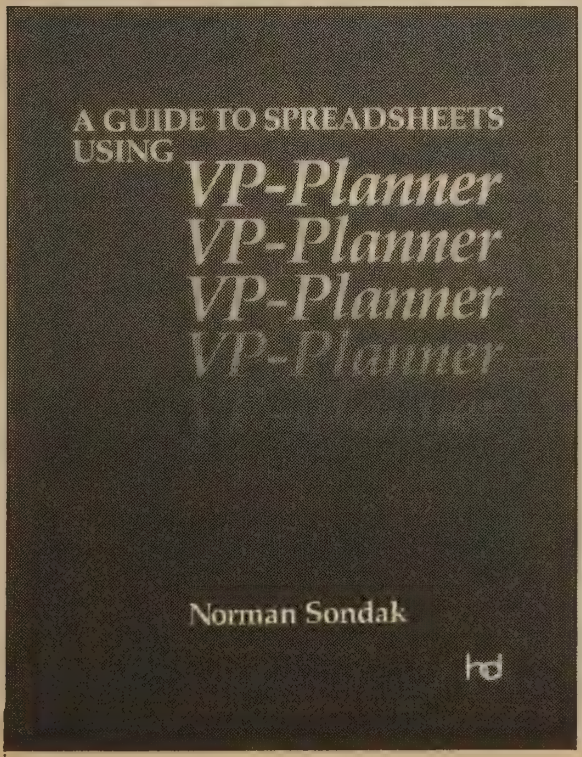
Manzana Microsystems is providing the industry's first 1.4 megabyte 3.5″ floppy disk drive systems for 80286 and 80386 based MS-DOS computers. In reaction to IBM's move to a standardized 3.5″ technology, Mananza is offering systems that will let users upgrade their existing PC hardware to be disk compatible with the new machines. Prices range from $325 to $595. Manzana Microsystems Inc., 7334 Hollister Ave., Suite B, Goleta CA, 93117, (805) 968-1387.

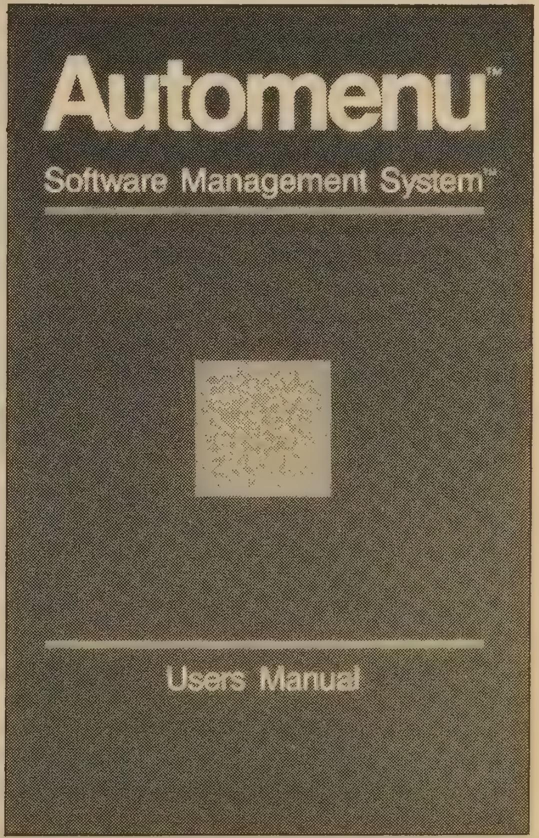
Supersoft Puts Diagnostics In Kit Form

Service Diagnostics: The Kit, is Supersoft's easy-to-use diagnostics package in a lower priced kit form. The package includes an improved program with additional tests for all the latest hardware. Service Diagnostics is for the IBM PC, PC/XT, AT and all compatibles. It will isolate problems down to the board and chip level. ($495.) SuperSoft 1713 S. Neil Street., P.O. Box 1628, Champaign, IL 61820. (217) 359-2112.

VP-Planner Guide

Norman Sondak of San Diego State University has written a book that uses *VP-Planner* in order to teach the use of electronic speadsheets. *A Guide To Spreadsheets Using VP-Planner* is designed for college students, business professionals, scientists and engineers. It provides useful information for experienced spreadsheet users as well as beginners. The book also includes a disk containing an educational version of *VP-Planner*. Published by Holden-Day, Inc. 4432 Telegraph Ave. Oakland CA 94609.





Automate With Automenu

Automenu from Magee Enterprises lets you take control of DOS functions on your IBM PC or compatible and make your life a little easier. You can perform DOS functions with a single keystroke. You can also create menus that let you easily access all your frequently used programs. *Automenu* is designed for both inexperienced and power users. Magee Enterprises, 6577 Peachtree Industrial Blvd. Norcross, Georgia 30092-3796 (404) 446-6611.

PC SYSTEMS

IBM's Second Generation PCs: What It All Means

By Ken Milburn

Although this column usually covers the ways of putting things together in order to get a specific job done, we can't get anything done effectively unless we plan ahead in configuring our base hardware. So it seems appropriate here to take a look at what IBM has announced and what it all means in terms of your being able to plan for the immediate future.

If you've been holding your breath for the past few months, waiting for the tablets to come down the Blue Mountain—you can breathe now. IBM has proven itself more strategically intelligent than it often gets credit for, especially from those who predicted a closed, proprietary system. The software you're using now will run on the new systems, and neither of the new operating systems will shut these applications out, either. None of the IBM-machines is a clone-killer, even though they may prove tough competitors. At the same time, IBM is filling its bread-and-butter corporate client's wish list, effectively slowing the inroads clones and Macs are making in that area.

IBM's strategy seems to have been to provide irresistible features and functions that competitors would have a hard time copying—without entirely shutting out the competition or abandoning the installed base of PCs.

THE NEW MACHINES

There was significant news in five categories: Personal System/2 computers, operating systems, a new bus architecture, peripherals and software.

Eight new computers were introduced, divided into four new "Personal Systems": Models 30, 50, 60 and 80. All of these machines are entirely robot-made at IBM's Austin, Texas plant, where they can be spit out at the rate of one per minute (and probably very cheaply, leaving IBM lots of margin to be competitive). Up to 80 percent (depending on model) of a PS/2's content was developed by IBM. And hard-to-copy IBM-unique logic chips are used to support the generic Intel 8086, 80286 and 80386 processors used in the PS/2 series.

Nevertheless, there's nothing to suggest that Big Blue is ready to cut the umbilical cord between PS/2 systems and the PC and compatible 8088/86/286/386 machines. The new technology does make the systems smaller, theoretically more reliable, faster and less power-hungry.

The earth-shaking news is that the fragile and clumsy 5¼" floppy is about to turn up its toes. All the new machines use 3.5" plastic-encased floppies, joining Apple, Amiga and Atari.

Many functions that used to require adapter cards are included on the new system, so you can get by with fewer slots, and systems are less costly and confusing to configure. PS/2 systems are easier to set up because there are no dip switches or jumpers.

Many functions that used to require adapter cards are included on the new system, so you can get by with fewer slots, and systems are less costly and confusing to configure. PS/2 systems are also easier to set up because there are no "dip" switches or jumpers. Motherboards are even smarter than the AT's.

The Micro Channel, included on the higher-end machines, offers a two-fold benefit: it's been designed to speed the transfer of data and instructions around the system and it's designed to minimize conflicts between simultaneously running programs.

Expanded memory is supported in some versions of the new operating systems. If you're running an AT-type machine, you'll need an EMS card with 16-bit bus to take advantages of all the new OS features. Eight-bit cards like the Thesys Fast Card may not do, even though they're cheaper and run just fine in present ATs.

The Model 30 is a foxily diminutive desktop unit based on the Intel 8 MHz 8086. It comes with either two 720K 3.5" floppies or with one floppy and a 20MB hard disk. The system board also contains 640K RAM memory and enhanced graphics support (640×480 dots in two colors, or 320×200 dots in 256 colors) called Multi-Color Graphics Array (MGA), plus ports for mouse, modem, printer and keyboard. Also included at no extra cost are clock/calendar and the new style "enhanced" keyboard (the one with separate cursor keys and function keys at the top).

At $1,695 the Model 30 is a bigger bargain than it seems—considering that color graphics, 384K of memory, and the extra ports would cost between $500 and $600 to add to the PC/XT it replaces. This is the only PS/2 model that can use PC-compatible expansion cards.

The bad news is that there are only three slots and a dinky 70 watt power supply. Still, the potential system throughput of the Model 30 is up to 2.5 times faster than that of the IBM Personal Computer XT.

The Model 30 is obviously designed to ease the transition between PC and PS/2 generations. It is aimed at entrepeneurships, individuals, home and student users.

The other computers in the Personal System/2 series are based on more powerful 80286 (16 bit) and 80386 processors, use a new system bus (Micro Channel Architecture) and expansion card connector, have cache memory for faster disk access, and come with the new Video Graphics Array that supports 640×480×16-color and 320×200×256-color graphics and 720×400×16-color text modes. They all use 3.5" floppies that store 1.4MB of data, but can also read the lower density 3.5" format of the Model 30 and PC-Convertible. They also include all the Model 30's above-noted standard features.

The Model 50 looks like a puffed-up Model 30 and is the only desktop among the Micro Channel machines. Like the Model 30, it has a teeny power supply (94W), only three card slots, and is available now.

However, the Model 50 is a much faster machine. The processor is a 10MHz 80286, the (included) 20MB hard disk uses a SCSI-like controller, and standard RAM is 1 MB (expandable to 7 MB on board). IBM claims that these features, combined with MCA and the disk-cache, make it "up to twice as fast as the IBM/AT." The base Model 50 sells for $3,595.

The Model 50 is meant to be the "serious" business machine for personal use. It's fast and powerful enough for use in professional desktop design, publishing and engineering workstation environments. Styled for prestige, it will find its way onto numerous executive desks.

The remaining five "Personal System/2" machines are less personal, in that they are all designed to be connected to each other or to other PC-workalikes in a Local Area Network or to IBM's larger systems. All are designed as free-standing "towers," meant to sit under or alongside a desk. All have seven 16-bit expansion slots and 200+ watt power supplies. They are really meant to run multitasking Operating System/2 or multi-user UNIX, and to be connected up to other systems.

The two versions of the Model 60 (44 or 70MB hard-disks) are 16-bit 80286 10MHz machines. Memory can be expanded to 15MB—one short of the 16MB limit of the 286. Strange.

The configuration featuring the 44MB fixed disk drive is available immediately for $5,295—nearly twice the price of a comparably equipped 10MHz AT clone. IBM seems to be calculating performance characteristics against the 6MHz AT, so we estimate the real performance difference between the Model 60 and a 10MHz AT with disk caching software to be no more than 20%.

The three versions of the Model 80 are based on the super-powerful 32-bit 80386. Two of the

---

Copyright © 1987 by Ken Milburn. All rights reserved. *Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including* PCWorld, InfoWorld, Computer Graphics World *and* MicroTimes. *He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on The WELL, (415) 332-6106.*

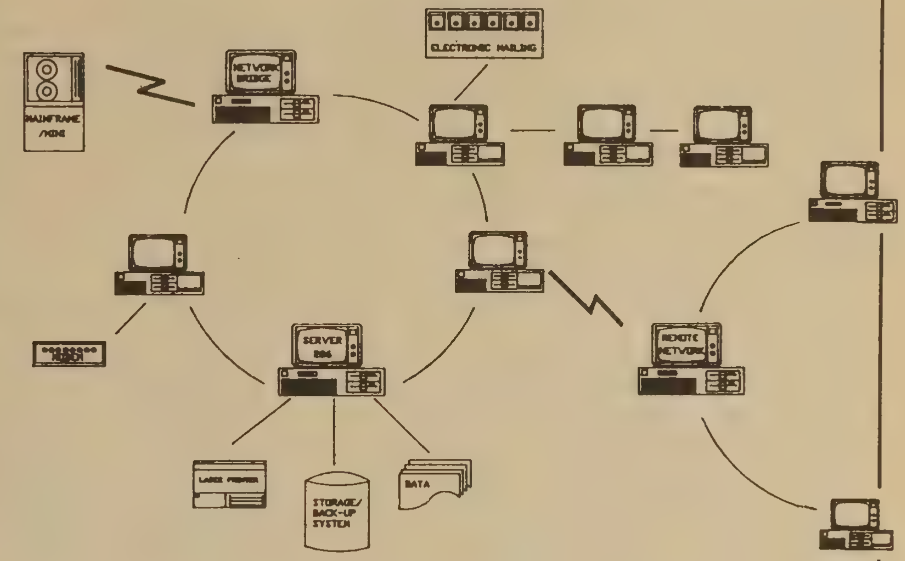
TO HAVE A POWERFUL LAN NOW IS THE TIME!!!

LOWEST EVER—SUPER SALE ON NOVELL & ARCNET

Option A

We ease the connectivity for you:

Free consultation on LAN
Various hardware/software discounts
Moderate Installation/Training charge
90 days labor/parts warranty.
Maintenance contract available.



Option B

Or if you want to do it yourself:

	List	Sale
Novell Netware/286	$2195	**$1895**
Novell Netware/86	1595	**1395**
SMC Active Hub	800	**560**
SMC Passive Hub	110	**75**
SMC PC-110 NW Card	545	**360**
SMC PC-200 NW Card	595	**375**
Cable RG-62/U 1st 25ft		**23**
Extra Foot		**.30**

File server preparation **$1.00-$1.50/per MB**
Two Hour Tutorial Instruction **$100**

Option C

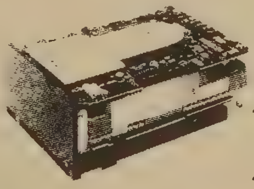
Ideal for small operation, we have "Novell Arcnet Starter Kit" **($3200)**

Netware/286, P-Hub, 3 PC-110 & Cable
File Server Preparation
Application Software Installation
Two Hours Tutorial Instruction

You just plug in and go!

Enjoy also the low price of

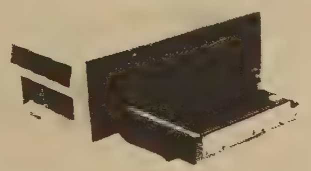
Storage Devices



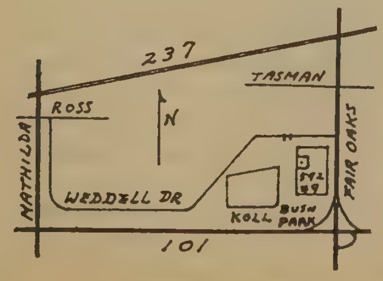
			SALE
Seagate	225	20M, 65MS	**$245**
	225	W/WD	**315**
	238	30M, 65 MS	**265**
	238	W/WD	**365**
	4038	30M, 40MS	**520**
	251	40M, 40MS	**560**
	4051	40M, 40MS	**630**
	4096	80M, 28MS	**880**
Miniscribe	6053	41M, 28MS	**610**
	6085	92M, 28MS	**870**

And other higher capacity HD tape backup.

TEAC 20M	**550**
Archive 40M	**600**
Wangtek 60M	**650**



NETWORK ASSOCIATES CORPORATION



TEL: **408-744-0631**
FAX: **408-744-0639**
592 Weddell Dr. #9
Sunnyvale, CA 94089
C.O.D. only, very sorry.

Novell Authorized Dealer

LAN should be nothing but a commodity.
Let us remove its barrier for you.

models run at the standard 16MHz clock rate, while the $11,000 top-of-the-line model (not available until 1988) zips along at 20MHz. Depending on model, these machines come standard with 1MB or 2MB of memory.

Of the seven expansion slots, three are 32-bit and four are 16-bit. Two models will be available in July, one with 1MB of RAM and a 40MB drive, the other with 2MB RAM and 70 MB drive. The third model will be available in the fall; it sports a 20MHz processor and uses 1M-bit memory chips.

NEW MONITORS

As you've no doubt guessed, all of these machines require new monitors, but they (and versions of the new display cards) can be retrofitted to PCs and PC-workalikes. It's also important to note that the new displays and graphics adapters are fully compatible with graphics modes for the current IBM Color Graphics Adapter (CGA) and Enhanced Graphics Adapter (EGA). That means that virtually all current software will run on the new displays without modification. All the displays feature a non-glare screen and have an integrated or optional tilt and swivel base.

The new monochrome monitor uses white phosphor and can be switched from black-on-white to white-on-black; colors will be shown in 64 shades of gray. Color monitors come in 12", 14" and 16" models, none of which is multisynchronous. The first two can show 640 × 480 dots (or less). On the 16" color monitor, up to 1,024 by 768 dots are addressable.

All but the 16" display are available now at prices ranging from $250 for the mono to $1,550 for the 16-incher (plus another $1,290 for the adapter card to drive it). VGA retrofit display adapters are $595—about the same list as the current crop of EEGA third-party cards. It'll be tough to get a discount for a while, though. And there won't be much immediate software support for VGA. The difference is, you can't get anything like 256 color on the EEGAs at any price.

All these machines require new monitors, but they can be retrofitted to PCs and PC-workalikes. The new displays and graphics adapters are fully compatible with graphics modes for the current IBM CGA and EGA cards. That means that virtually all current software will run on the new displays without modification.

Speaking of retrofitting, you can also get a 720KB 3.5" internal floppy drive from IBM for a fairly reasonable $170. These will work just as well in clones, so there's no barrier to communicating data from the old machines to the new machines. Or, if you have the two sitting side by side, IBM will sell you software (IBM Data Migration Facility) that'll let you transfer files directly from any PS/2 machine to any PC/MS-DOS machine through a standard printer cable.

OPERATING SYSTEMS

Before The Announcement, there was much speculation that IBM would introduce a proprietary operating system. When the day came, two were announced. One is an upgrade to PC-DOS, the other an entirely new multi-tasking OS that breaks the 640K memory-barrier. Neither is incompatible with present PC/MS-DOS applications. Both operating systems were developed jointly with Microsoft and will be available for the full range of PS/2, PC and PC-compatible machines.

Available immediately, IBM PC-DOS 3.3 supports all of the new systems and all previous models of the IBM Personal Computer; it's now on dealer's shelves. Operating System/2, available in the first quarter of 1988, will run on Personal System/2 Models 50, 60 and 80 (as well as AT and 386 lookalikes), and is compatible with most applications written for PC-DOS. You can upgrade to DOS 3.3 for $75. New commands (FASTOPEN, CALL and APPEND) have been added to make files within DOS faster and easier to use. Other enhancements include additional communications ports and support of fixed disks larger than 32 MB.

Not available until "sometime in 1988," Operating System/2 is still vaporware. At least we now know that its not going to be called "A-DOS or DOS 5.0." In the meantime, there's no reason not to use already available solutions to multitasking and over 640K memory management, such as Digital Research's Concurrent DOS 386, QuarterDeck's *DesqView* or SoftLogic's VM386.

The announcement also confirms some other significant hunches. The new system is designed to use a version of Microsoft *Windows* as a graphical and multi-tasking user interface. The Presentation Manager (new *Windows*) is also designed to encourage application developers to use conventional commands for common functions, such as HELP, QUIT, and CANCEL, thereby reducing user confusion. A new version of *Windows* for PC/MS-DOS will be available in June to match the Presentation Manager's enhanced features, such as overlapping windows. This gives IBM a jump-start on making its PCs more Mac-like by providing a consistent, interactive and graphical (non text-mode) interface. Wise move, since computers have to become more intuitive if they are going to reach the 80% of office desks that don't have them yet.

OS/2 is the first application of IBM Systems Application Architecture, a common framework for developing and using the same application programs across the range of IBM personal, System/3X and System/370 computers.

OS/2 will become available in stages, beginning in the first quarter of 1988. OS/2, Standard Edition 1.0, supports large memory, multitasking, and a PC/MS-DOS operating environment. It will be generally available in the first quarter of 1988. The second version, 1.1, which will replace Version 1.0, adds the Presentation Manager. Additional functional detail and availability of Standard Edition 1.1 will be announced in the fourth quarter of this year.

IBM will also offer a proprietary "Extended Edition" (probably the foundation for all the proprietary OS rumors), which adds an advanced relational database management system, intersystem communications, connectivity, and terminal emulation.

It was these add-ons that caused the stock of Ashton-Tate and Microstuf (the leading vendors of database and communications software, respectively) to drop the day before The Announcement. Microsoft and Lotus stocks shot up at the same time, thanks to the endorsement of *Windows*. Lotus has said that it's working on *Windows*-based *1-2-3* and other applications.

IMPLICATIONS

To me, the most worrisome part of The Announcement was the Micro Channel architecture. IBM is using a great many home-designed and -built chips in its implementation, and the circuit design itself is no doubt heavily protected. So despite the fact that all current applications are compatible with the new systems, it is entirely within reason that new applications could be developed that will only run on the PS/2 and other IBM-proprietary machines. Whether or not the public would accept such applications remains to be seen. So far, sales of IBM-published software for micros have been the pits.

A new version of Windows for PC/MS-DOS will be available in June to match the Presentation Manager's enhanced features, such as overlapping windows. This gives IBM a jump-start on making its PCs more Mac-like by providing a consistent, interactive and graphical interface. Wise move, since computers have to become more intuitive if they are going to reach the 80% of office desks that don't have them yet.

The most significant peripheral is an optical disk that contains 200MB of storage. You can add new information to this disk, but can't erase or overwrite it. Because data are unerasable and the media removable, WORM drives make ideal backup devices and ideal repositories for large on-line databases. At nearly three grand, this drive isn't irresistible, but the Blue endorsement will encourage competition and, in combination with Microsoft's CD-ROM offering, encourage competition in laser storage technology.

The WORM (Write Once, Read Many) drive is scheduled for availability in the fall, in either internal or external configurations. Different configurations allow it to be used with the full range of PS/2 and PC-compatible machines.

Considerably less exciting is IBM's new laser printer and publishing system. The laser printer, including the slot-based intelligence to run PostScript, cost about $2,000 more than an Apple LaserWriter and prints about 30% slower. On the other hand, the idea of keeping the intelligence and the printer separate makes it easier to upgrade one or the other as new developments come along. And IBM's endorsement helps to legitimize *Windows*, *PageMaker*, PostScript and PC-based desktop publishing in general. ☐

Power in Numbers.

We've done it again! Garnet Business Machines is proud to announce the availability of the new APC IV PowerMate 1 from NEC. The PowerMate 1 is a powerful desktop computer whose functionally designed size respects the limitations of desktop space without sacrificing performance. Like its big brother, the PowerMate 1 has all the speed, power, expandability and graphics you'll ever need. It's just smaller. And unlike business computers of its dimensions, the PowerMate 1 offers three internal storage device slots and supports both 5¼" and 3½" disk drives. Which means it is easily compatible with both the APC-IV as well as NEC's MultiSpeed portable laptop computer. And that's compatibility that goes wherever you do.

NEC

Garnet Business Machines has always offered quality and integrity. Now, we've gone one step further. So call us today for a demonstration of the versatile new PowerMate 1 from NEC, and we'll show you what success is made of.

Garnet Business Machines is a *specialist* in NEC computer systems. Which means we'll have what you want, when you want it. Which means we'll be there when you need us. And in business, that's the *real* bottom line.

"THE COMPUTER SOURCE FOR THE SMART BUSINESS PROFESSIONAL"

GARNET
BUSINESS MACHINES
"Solid as a Rock"

1024 West Maude Avenue, Suite 203
Sunnyvale, California 94086
408-738-3364

UNIX

A Little Net Music

By Bennett Falk

In early April Sun Microsystems announced a dramatic reduction in price for some models of the Sun Workstation. The Model 3/50 workstation, with monitor, 4MB memory, and network hardware, now lists for just under $4995. A complete stand-alone system from Sun has a list price of $9995 and includes a 71 MB disk, cartridge tape drive, and Sun's complete implementation of Berkeley's 4.2 UNIX.

This is a bold move. Sun's 15 MHz 68020-based computers will be price-competitive with machines like the Macintosh II and the Compaq 386. The big advantage Sun has over other high-end personal computers is a strong commitment to networked systems—these machines work well enough in isolation, but they excel as independent computing stations sharing resources over a high speed network. Every model in the Sun product line is equipped with an Ethernet interface, and Sun has produced a number of software tools to make a distributed computer network easy to use and administer.

At the heart of Sun's effort is the Network File System (NFS) which allows users throughout a computer network to share files more or less regardless of which computer the file is stored on. NFS is a fascinating product, but to understand it, we need to talk a bit about network terminology.

WHAT IS A NETWORK?

The word "network" gets bandied about pretty loosely these days. Often it signifies nothing more than a connection (of whatever kind) between two or more computers.

Though there are many kinds of computer networks, they are all basically a means of distributing some service or resource. Any network will consist of "servers" and "clients." Servers offer resources; clients consume them. Some participants in the computer network may even fill both roles. We can distinguish kinds of networks by looking at how the roles of client and server are filled.

At one extreme are the networks in which computer users take the "client" role and the network's services are delivered directly to the user. The server role may be filled by any number of things the client must interact with: a remote computer, a program, or even another user. The services provided to human clients are things users can work with: files, messages from other users, or even an interface to a program.

This form of computer network requires nothing more than a connection between serial ports on two computers. Traffic over such a connection moves slowly, traveling at speeds no greater than about 60,000 bits per second (about 6,000 characters per second), but even this far exceeds the speeds at which most users will read the information the network provides.

Slow networks based on serial communications are not easily shared: the jobs moving through the network are bulky, and ordinarily must be processed completely before the next item in the network can be processed. As one client is served, others go without.

In contrast, imagine a network in which the client role is occupied, not by a human user, but by the computer. Getting the humans out of the network changes everything. The service the network provides is less likely to be information and more likely to be some resource the client machine can manage. Disk space, perennially in demand, is a good example, as we shall see.

If the service the network provides is some hardware resource, the speed at which traffic circulates through the network becomes critical. In high speed networks, clients and servers converse at speeds ranging from one to ten million bits per second.

A fast network can still provide services to "user" clients, but this does not begin to exhaust its capacity. Communications flowing over an Ethernet connection exemplify the versatility of high speed networks.

With the Ethernet design, all the nodes on a network are connected by a single trunk line which carries all network traffic. Each host computer monitors the line constantly, but retrieves only the messages for its network address. The messages, of course, could be almost anything: a user's attempt to login from another computer on the network, a request from another computer for disk services, or part of a file being copied to or from another computer. The requests for services are processed as they are received, and requests from various sources for various services can be interspersed freely.

MAKING DISK SPACE AVAILABLE OVER A NETWORK

There are several ways of making disk space available as a network service. The UNIX 4.2 remote copy program "rcp" will let users copy files from one network node to another in more or less the same way that files are copied from one directory to another on a single computer. Of course, rcp is a tool that provides a network service directly to users. It works only for files, and it contains no mechanism for managing the disk space that a copied file occupies.

A more sophisticated service is available from utilities like "Network Disk" (ND), also from Sun. ND makes raw disk partitions available to its clients (the clients, in this case, are machines on the network). A client can be granted exclusive use of a raw disk partition on the server. The client machine works with this partition in much the same way that it works with its own logical devices: it builds a file system on the remote partition and makes this disk space available to users. A file system created in this way can be accessed as though it resided on the client machine. Other users on the network, however, have no access to the disk at all. In effect, the client has been given a hardware resource by the server.

THE NETWORK FILE SYSTEM

NFS is an almost completely painless network service that allows users and client machines to have protected access to shared files on a server. Unlike the Network Disk service, access through NFS is not limited to a single client machine. The administrator of a server can make a file system available to client machines by simply composing a list of the machines to which the file system may be exported. Any client machine on this list may have access to the public file system by using a special version of the "mount" command. Once the file system is mounted, users on various client machines may work with the file system.

To achieve this marvelous effect Sun has created a network service quite distinct from its predecessors. The rcp utility described above allows users to move files through a network; ND allows computers to manage raw disk partitions on remote servers. In contrast with both of these tools, NFS is first and foremost a service whose clients will be operating systems. The file system itself is the service, and users working with the file system will hardly be aware of what NFS is doing behind the scenes.

NFS is composed of a modified UNIX kernel, assorted library routines, and a collection of utilities. It is built around two facilities: Remote Procedure Call (RPC) is an advance in interprocess communication that allows two processes running on different machines to work together *very* closely. Sun's External Data Representation (XDR) provides a means of representing the various data types in a form that any machine on a network can use. Also included with the system is a database ("the Yellow Pages") to help administer the network.

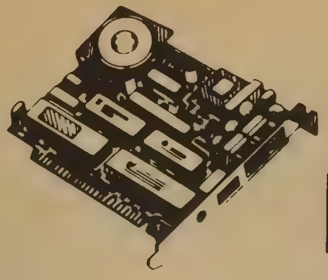
Though it is put forward as a tool to span a variety of operating systems, NFS has been developed initially to work with UNIX, and this is a mixed blessing. While UNIX embodies many of the concepts that are fundamental to any shared access system, it also presents unique challenges for network projects such as NFS.

Above all, when a UNIX system crashes, any applications running on it crash as well. The problem for NFS is to minimize the impact of a crash anywhere on the network. This was handled by making the server "stateless." This means that under NFS, each client is independently responsible for finishing its work and the server need not remember anything from one client request to another. Consequently, there is nothing that needs to be remembered when the server is brought up after a crash. Because clients have minimal reliance on the server, they can survive server crashes.

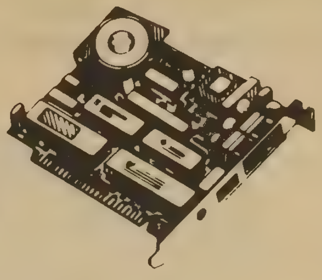
Another difficult point is that UNIX was designed from the outset to be self-contained. Every UNIX system has a super-user with absolute authority, and this has constrained NFS to incorporate a number of special features to manage the multiple super-users who might have access to a file system through the network.

There are other issues as well, but on the whole the NFS product offers a practical approach to resource sharing. With the price cuts Sun has recently announced, you may well encounter NFS sooner than you might have thought possible. (Sun Microsystems, 2550 Garcia Avenue, Mountain View, CA 94043; for sales info call 800/821-4642.)

Copyright ©1987 by Bennett Falk. All rights reserved. *Bennett Falk lives in the East Bay, works with computers and writes when time permits.*



The Leading Edge® Information System™



• IBM Compatible • FREE Word Processing Software with Spelling Correction and Lotus™ 1-2-3 look alike Spreadsheet • Hayes Compatible Installed Model "L" Series™ 1200B Modem • 512K RAM Expandable to 768K • Dual-Disk Drives • High-Resolution Monochrome Monitor

The Leading Edge® Model "L" Series Modems

LEADING EDGE
AUTHORIZED RETAIL DEALER

Leading Edge is a registered trademark and Model D Model L Series and Information System are trademarks of Leading Edge Products, Inc. IBM is a registered trademark of International Business Machines Corp. Hayes is a registered trademark of Hayes Computer Technology. Lotus 1-2-3 is a registered trademark of Lotus Development Corp.

- For Leading Edge, IBM and Compatible
- Hayes-Compatible
- Auto-Answer Auto-Dial

1200B $149.95

2400B $289.00

Constitution Specials!

Leading Edge Single Drive Model "D" Personal Computer w/monitor $995

Leading Edge Model Dual Drive "D" Personal Computer complete with monitor & Leading Edge® Word Processing $1095

THE UNFIXED FIXED.

If you own or are thinking of owning a personal computer with a fixed disk drive, don't. Because the Leading Edge Infinite Memory System™ is about to make it obsolete. The Infinite Memory System is a fully configured Model "D"® Personal Computer complete with one floppy disk drive, one Leading Edge Infinite Memory Drive and two 20MB removable Leading Edge Infinite Memory Cartridges. That's right—removable 20MB disk cartridges. When you fill 20 megabytes worth, simply pop in another 20MB cartridge and file the old one. When you hit the road, pop the disk cartridge into your briefcase and take it with you. The cartridges are about the same size as a floppy disk (only slightly thicker) so they can be locked in desk drawers, even dropped in mailboxes. And because they utilize Bernoulli Technology™, access time is as fast or faster than most fixed disks. All this, built into the same personal computer that turned the industry on its side by offering the most thorough list of standard features ever offered. All this at an incredible $1995, with additional 20MB cartridges priced at only

$49.95

Before you get fixed up with anything else, see the new Leading Edge Infinite Memory System

$CALL FOR BEST PRICE

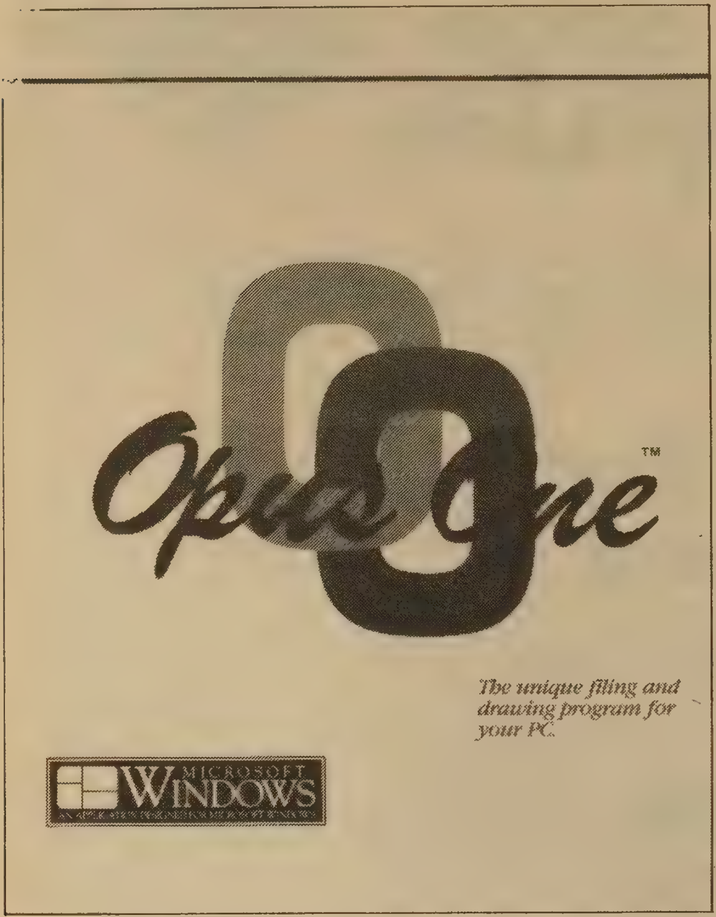
Leading Edge and Logo and Model "D" are registered trademarks and Leading Edge, Infinite Memory System, Infinite Memory Drive, Infinite Memory Cartridge, and IBM Compatibility Logo are trademarks of Leading Edge Products, INC. IBM is a registered trademark of International Business Machines Corp. Bernoulli Technology is a trademark of Iomega Corp.

COMPATIBLE WITH
THE ORIGINAL IBM®
INDUSTRY STANDARD

UAS

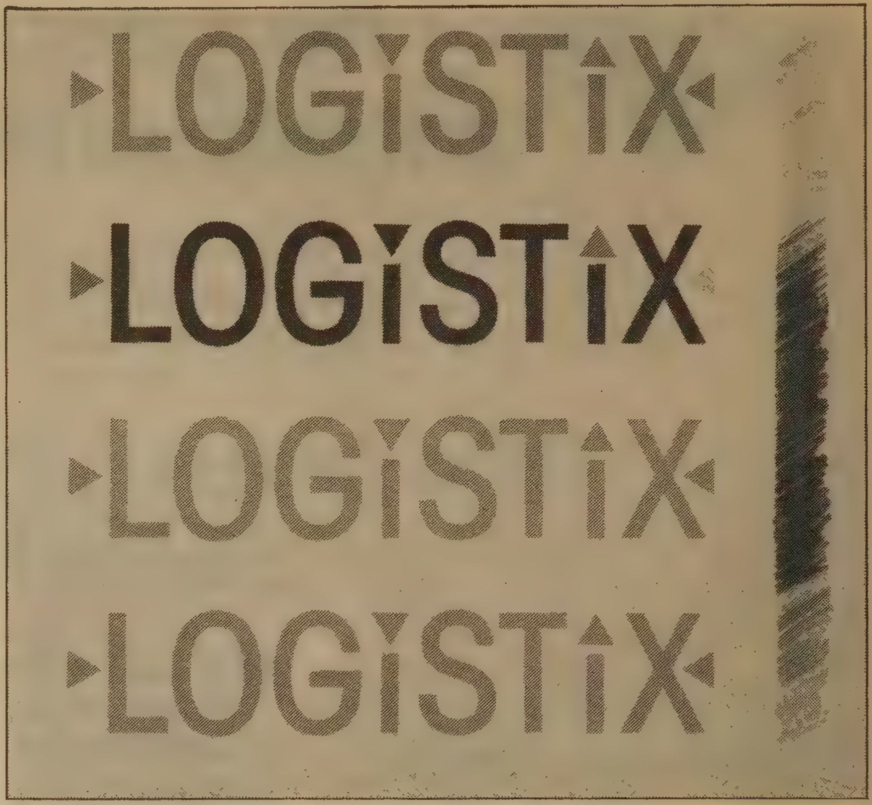
Universal Automated Solutions, Inc.

1655 N. California, Walnut Creek
(415) 943-6848


Opus One™
The unique filing and drawing program for your PC.
MICROSOFT WINDOWS
AN APPLICATION DESIGNED FOR MICROSOFT WINDOWS

Combine Pictures And Information With Opus One

Opus One is a tool designed for use with Microsoft *Windows* on the IBM PC/XT/AT and compatibles. It lets you create drawings using a variety of colors, patterns and fonts. You can then store information in your drawing and retrieve it with the touch of a button. You can also connect files together to form a network of drawings and information. Roykore Software Inc., 11669 Santa Monica Blvd. Suite 209, West Los Angeles, CA 90025. (213) 477-7810.



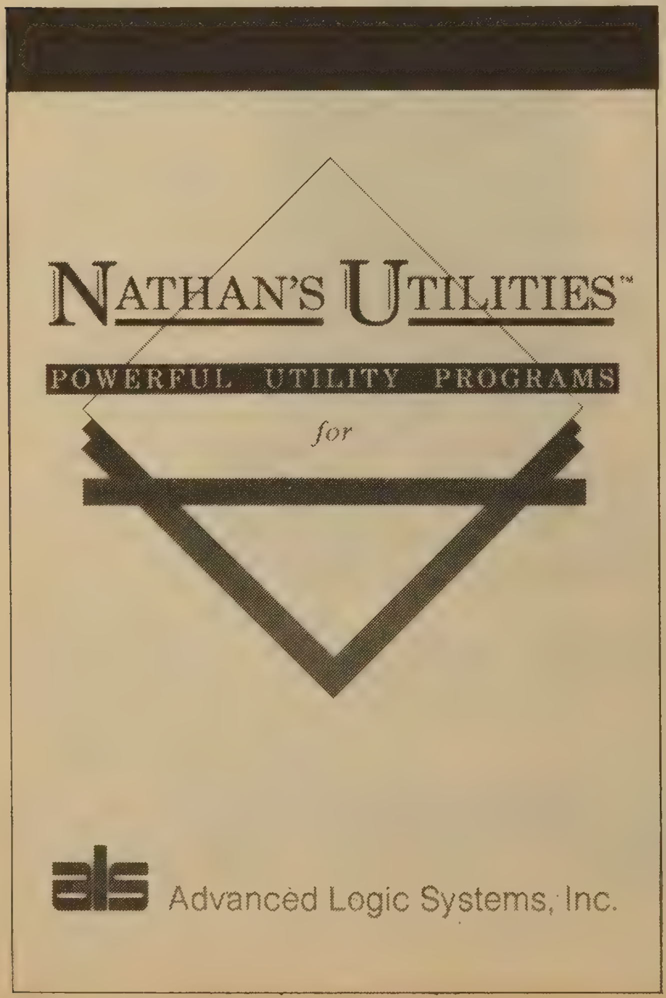
Logistix Brings Time Management To The Spreadsheet—On The ST

Logistix adds the feature of time management to spreadsheet, database and graphics capabilities to provide a versatile planning and decision aid for the Atari ST. Its 1024 column by 2048 row worksheet is large enough for serious business applications. *Logistix* allows you to create a "computerized wall planner" for allocating your resources to different tasks over periods of time. Progressive Peripherals and Software, 464 Kalamath Street, Denver, CO 80204, (303) 825-4144.

Organizing Accessories On PC Partner Run Concurrently With Other Software Programs

Partner PC from Timeworks offers ten instantly accessible, memory resident accessories that operate concurrently with other software programs on your IBM PC/XT/AT, PCjr or compatible. The accessories include an appointment calendar and scheduler, memo pad, phone list and autodialer, name and address list, full function and advanced financial calculator, typewriter and extended printer control. ($59.95) Timeworks Inc., 444 Cook Lake Road, Deerfield, IL 60015. (312) 948-9200.

TIMEWORKS
Personal Computer Software
NEW! Dealer Copy NOT FOR RESALE
IBM PC & COMPATIBLE COMPUTERS
PARTNER PC
Ten instantly accessible, memory-resident desktop accessories that operate "concurrently" with your other software programs.
Accessories At Your Command:
Appointment Calendar & Scheduler
Memo Pad
Phone Book & Auto Dialer
Address Book
Alarm Clock
Full-Function Financial Calculator
Typewriter
SwiftDOS
MAY
Call Steve!
DOS
MONEY BACK GUARANTEE



Nathan's Utilities Enhance Power And Productivity

Nathan's Utilities is a collection of programs designed to enhance the power and productivity of your IBM PC/XT/AT or compatible. Among the utility programs included in the package are ORGANIZE, a memory resident disk organization and function key program, OPTIMIZE, which rearranges your hard disk for maximum usable disk space and speed and BACKUP an efficient way to back up your hard disk. ($79.95) Advanced Logic Systems, Inc., 1283 Reamwood, Sunnyvale, CA 94089. (408) 747-1988.

SUPER PRICES FOR SEAGATE HARD DISKS

20MB ST225
W.D. controller
$310

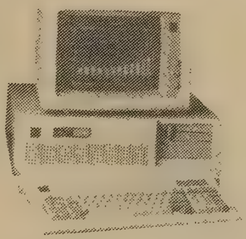
30MB ST 238/W.D.
RLL controller
$360

(These are not sale prices, they are our normal price)

386 system: $2459

1MB 100NS RAM installed, 384K for system, expandable to 10MB, 1.2MB floppy drive. Western digital hard & floppy disk controller, 200W power supply, case, enhanced key- board.

286 system: (10/6 MHZ) **$910**
512K on board, expandable to 1MB, 1.2MB floppy drive/controller, 200W power supply, MGP or color card, AT keyboard.



Turbo XT system: (8/4.77MHZ) **$415**
256K on board, expandable to 640K, 150W power supply, 360K drive/controller, MGP or color card, AT style keyboard.

SYSTEM BOARDS:

386 (16mhz)/1024K	$1750
At (10/6mhz)/0K	$370
Baby AT (10/6mhz)/0K	$360
XT turbo (8/4.77mhz)/0K	$88

INTERFACE CARDS:

Disk I/O	$65
Floppy disk controller	$23
Monographic/printer card	$55
Color/printer card	$56
Color card	$47
1.2MB floppy disk controller	$65
EGA card	$160
W.D. WX1 hard disk controller	$75
W.D. WA2 hard/floppy disk controller	$165
W.D. RLL controller	$105

CASES:

XT slide-in case	$29
AT slide-in case	$65
XT slide-in case/150w p.s.	$80

SEAGATE HARD DISKS:

20MB ST225 (65MS)	$250
30MB ST238	$265
40MB ST251	$510
30MB ST4038 (38MS)	$520
40MB ST4051	$620
80MB ST4096	$850

KEYBOARDS:

AT keyboard	$49
XT/AT keyboard	$47
Enhanced RT type keyboard	$73

POWER SUPPLIES:

150w for XT	$49
200w for AT	$79

MONITORS:

NEC Multisync (14")	$540
EGA monitor (14")	$350
Monochrome (12")	$80
RGB color (14")	$260
Monochrome (14")	$105
Nanao Multiscan (820x620)	$500

Monthly Special: EGA monitor + EGA card $501

**Dealers Please Call For The Best Prices!
We Guarantee To Beat Any Prices!**

JOINTEK

3080 LAWRENCE EXPWY
SANTA CLARA, CA 95051

(408) 746-3976

From The Mailbox

By Matthew Leeds

Once again it's time to take a look through the stack of new products that have arrived lately. There has been a tremendous number of new games, a few applications, and a couple of odds and ends that don't fit anywhere.

Accolade has an interesting new game out being billed as the first interactive comic book. Called *Accolade's Comics*, it spans three disks for the C64. It combines comic book graphics and animation with eight arcade-style games. There are two main themes, and dozens of sub-plots that depend on your choices during play. Think of it as a text adventure that uses the comic book format, with arcade-style games thrown in at various points.

To play Epyx's Sub Battle Simulator on the C64, you'll need to learn quite a bit about the operation of a submarine–this is a very technical simulation and requires a fair amount of dedication.

Also from Accolade comes *Power*, an arcade style 22nd century wargame sold under the Avantage label, Accolade's mid-priced line.

Epyx has released *Sub Battle Simulator* for the C64. This is the first release in a new series of simulations and adventure games called the Master's Collection. You are the commander of a WWII sub, whose goal is to complete one of 60 missions in either the Atlantic or Pacific, and return to home base. You will be commanding one of six different classes of U.S. or German subs between the years of 1939–45. The year will have a direct effect on what equipment is on the sub. To play you will need to learn quite a bit about the operation of a submarine — in fact this is a very technical simulation, and requires a fair amount of dedication to learning to achieve any success in gameplay. Appendices, a glossary, and the quick reference card come in very handy during play.

Also from Epyx is the third release in the Graphics Scrapbook series, *Chapter III: School*. It contains over 100 graphic images compatible with *Print Shop* and *Print Master*. Part of the marketing promotion Epyx is using will include a "buy one, get one free" offer, good until the end of June on any Graphics Scrapbook package.

Electronic Arts has completed its repackaging of the *Ultima* series with the release of *Ultima I* for the C64. This new version has improved graphics and animation, and faster gameplay.

Also for the C64 is *World Tour Golf*, EA's entry into the world of clubs and clubhouses. Players can choose from twelve courses worldwide, or design their own. The course design module offers complete control over placement of hills, bunkers, trees, water hazards, distance to greens, slopes, and background skyline. You can also design your own player, or take on the attributes of a favorite pro. Split screen graphics provide a view of the golfer's perspective and a bird's eye view simultaneously.

S.O.G.W.A.P. Software has released an upgrade to *The Big Blue Reader* for the 128. This new version offers support for Commodore 128 CP/M, as well as the current version's support for MS-DOS. *The Big Blue Reader* is a file transfer utility that will move ASCII files from one disk format to another. Binary files may also be transferred. BBR does not, however, add MS-DOS program execution capability to the 128. The new version also prints files, uses the burst mode of the 1571 to speed loading of files, supports the 1700 and 1750 RAM packs to increase file buffer sizes, and has enhanced conversion options.

Activision has a whole host of new products for the Amiga. Heading up the list is a new version of *The Music Studio*. This enhanced version includes support for IFF files (two way conversion). Song files created with *Instant Music* can be moved into *Music Studio* for editing and enhancement, and *Music Studio* compositions can be converted for use in *Deluxe Video*.

Under Activision's Gamestar label are three new releases. *GFL Championship Football*, a graphical simulation that uses elaborate playbooks and scrolling screen animation to give players a sense of being there. The digitized sounds of play may be the best part of this game. *Championship Baseball* is a similar product, using a 3-D split-screen perspective to give you an enhanced sense of the game. You have control over every element of the game, almost to the point of tedium. *Championship Golf: The Great Courses Of The World — Volume One: Pebble Beach*, includes all eighteen holes of this world famous course. This is a full simulation of the golfing experience, including a caddy should you require one.

Also from Activision is a new type of software, billed as interactive fiction. The program is called *Portal*, a science fiction tale set in 2106. You return from space to find Earth devoid of people. A single operating computer terminal is your sole source to information. You locate Homer, a biological computer, and the sole survivor of the world that was once your home. Together you attempt to discover what has happened and why.

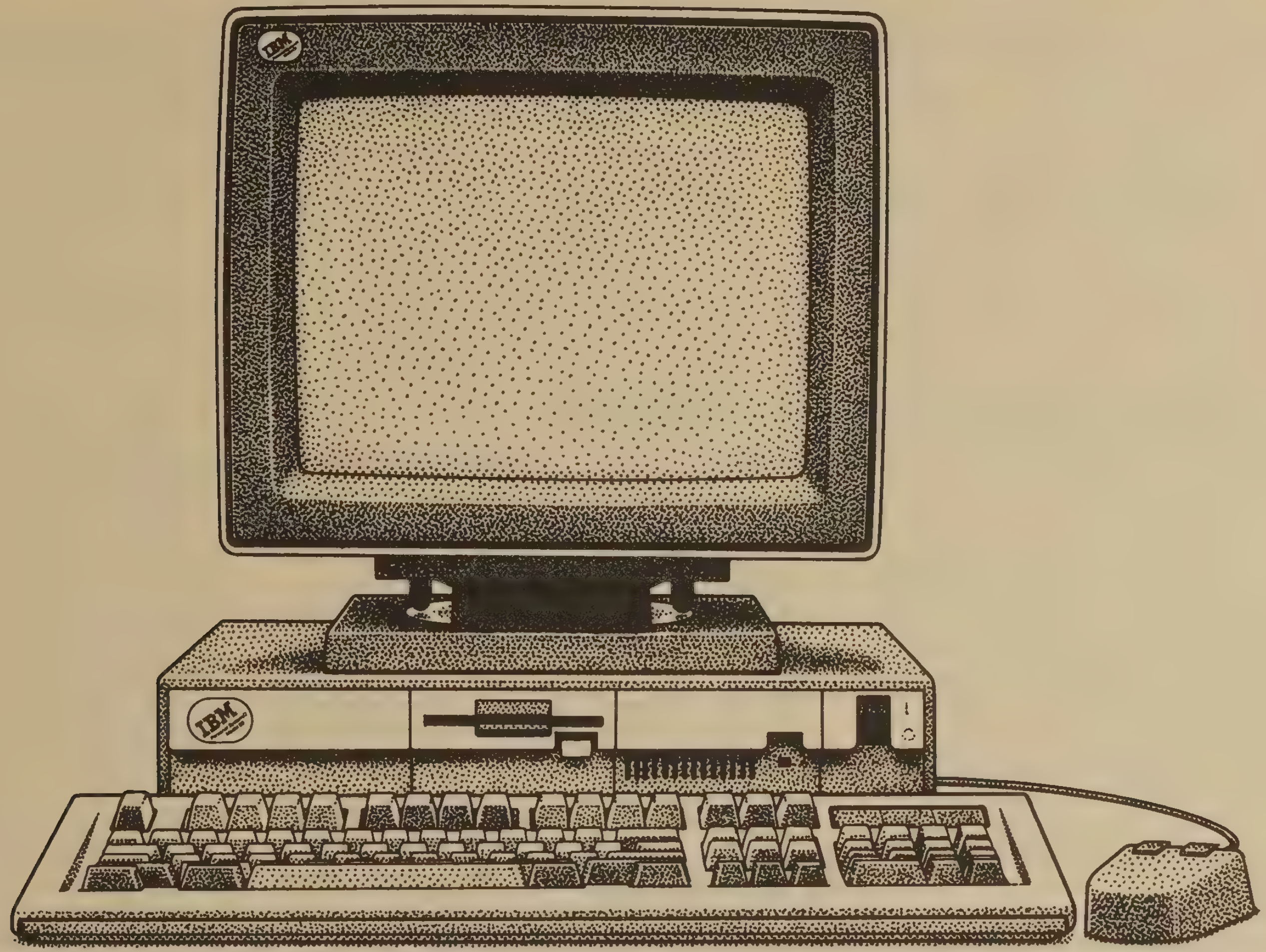
Electronic Arts has signed Sierra OnLine as an affiliated label, and has released five products for the Amiga. *Winnie The Pooh In The Hundred Acre Wood* is an adventure game designed for children ages seven and up. It promotes reading comprehension, problem solving, logic and mapping skills, while entertaining. *King's Quest I, II,* and *III* are animated 3-D fantasy adventure sets requiring strategy, skill, and patience. *Space Quest* is a parody of futuristic adventure games. You start as a sanitation engineer from the planet Xenon. Eventually you save the entire galaxy from space pirates. Just another day at the dump.

Finally, another interesting program from Pete Goodeve (author of *Xicon*). *Sili (Con:)* is a smart input line interpreter for the Amiga. *Sili (Con:)* opens a window on your CLI window that lets you keep a command history, edit commands prior to execution, recall commands and re-edit them. Commands can be deleted from the history list and new commands can be added without executing them. You no longer need to use the Execute command to call batch files because *Sili (Con:)* automatically checks commands to see if they are batch files. It either executes the commands or runs them with the Execute command. *Sili (Con:)* is shareware, with a suggested donation of $25.00. This will get you an update and support. The program is available from user groups and distributors of freely-copyable software (Fish disks, HotMix disks, etc.), and some local Amiga retailers. □

Activision's new Music Studio for the Amiga includes support for IFF files with two-way conversion; Instant Music files can be moved into Music Studio for editing and enhancements, and Music Studio compositions can be converted for use in Deluxe Video.

Copyright © 1987 by Matthew Leeds.

Easy to set up. Easy to use. Easy to buy.



The new IBM® Personal System/2™ Model 30

The Model 30 comes with nearly everything you need to sit down and start computing.

Including 640KB of memory and spectacular integrated color graphics support.

Much of what used to be optional is now integrated, including serial, printer and mouse ports.

For more information and a hands-on demonstration, stop in today. You'll get the solutions and support you'd expect from an IBM Authorized Advanced Products Dealer.

IBM®
Authorized Dealer
Advanced Products

IBM is a registered trademark and Personal System/2 is a trademark of the International Business Machines Corporation.

ComputerLand®

There's only one Number One.℠

4941 Junipero Serra Blvd
Colma, CA 94014

(415) 994-1400

© 1984 ComputerLand Corporation.
ComputerLand is a registered service mark of ComputerLand Corporation. There's only one Number One is a service mark of ComputerLand Corporation. IBM is a registered trademark of International Business Machines Corporation.

ATARI ST

Publishing Partner: Desktop Publishing On The ST

By Helmi Kobler

Way back in January of 1985, Apple announced its LaserWriter, that pricey, high-tech printer pretty much responsible for making desktop publishing possible. The Atari 520 ST was still a half year away from release then, and had just started shipping in June when a small Seattle-based company called Aldus introduced its *PageMaker* software for the Mac. *PageMaker* became an overnight sensation, and the Mac found itself pioneering an entirely new and revolutionary application for personal computers: desktop publishing.

Atari ST users, however, were still playing with an unfinished version of *NEOchrome* and a rather limited *First Word* that couldn't even double-space a document. Nonetheless, it didn't take the ST community long to realize that whatever the Mac could do, the ST had the potential to do better—especially in the area of desktop publishing. How? The ST was faster than the Mac. It had a higher screen resolution, too. And it was about half the price of a comparable 512K un-enhanced Mac system. The only hitch was that there was no publishing software to exploit this superior hardware.

Now, though, some serious desktop publishing packages are appearing and it's beginning to look like the ST may become a competent alternative to the expensive Mac and MS-DOS publishing systems used today.

The ST's first publishing package was Soft Logik's (314/894-8608) *Publishing Partner*, which has more or less become the desktop publishing software of choice (in fact, it's been the *only* choice until recently). Resembling Aldus's *PageMaker*, the $149.95 program lets you create detailed page layouts of text and graphics (with monochrome or color ST sytems), which can then be printed on either a dot matrix or PostScript laser printer. It's like an electronic paste-up board, where you can plop objects such as text columns or pictures down on a page and easily arrange them to your liking. Since *Partner* uses the WYSIWYG (or What-You-See-Is-What-You-Get, if you don't like to toss around those fancy acronyms) approach to page design, your printed page will look exactly like the one you conjured on-screen.

Creating page layouts with *Partner* is relatively easy until you get into some unusually complex designs. Text columns can be defined either manually with the mouse or by way of the Create Columns option, where you indicate the number of columns you want and the gutter space between them, and *Partner* creates them for you. Once a column has been defined, text can be entered through the keyboard or, more likely, by "importing" an ASCII file written with, say, *Word Writer ST*. Though Soft Logik says *Partner* handles word processing tasks well, I found that it's fine for typing headlines or captions, but less desirable for anything larger than that. Better to leave body copy to a dedicated word processor.

Publishing Partner can do some fantastic tricks that no dedicated word processor has managed yet, though. For instance, text can be cast in a variety of typefaces, point sizes and special attributes. If you're using a PostScript printer, you can print in Helvetica and Times fonts of any point size from 2 to 216, though 72 points is the largest size your monitor will display. If you're using a dot matrix printer, you'll limited to only Helvetica and two System fonts. *Partner* requires a screen and printer version of each laser and dot matrix font, which apparently entails a painstaking creation process. So the initial selection is pretty limited, though additional fonts are available from Soft Logik at $29.95 for a set of three. *Publishing Partner* also sports 15 special text attributes. Besides your everyday bold, italics and underline effects, you can spice up your type with attributes such as Backslant, Shadow, Mirror, Upside Down and more. All fonts, point sizes and attributes can be mixed within the same column.

And, of course, *Partner* has definable character spacing, line spacing and kerning by points. It will also center, justify, and block text right or left, and route overflowed text on individual pages or through an entire document.

On the graphics side of things, *Partner* can import pictures in either Degas, NEOchrome or Tiny format, though you get the best results (and sometimes the only acceptable results) with high resolution Degas files. Importing is done by loading a graphic into the program's picture buffer and boxing the portion you'd like to display in your page. Once you've got a graphic on the page, it can be easily moved, resized or cropped.

More important, though, is that *Publishing Partner* is not only built to support the fancy PostScript laser printers most other desktop publishing programs are limited to, but also works well with the cheap $250 dot matrix machines that you and I own. Soft Logik has created drivers for just about every 9- and 24-pin printer you can name. They have also invested a lot of effort into making dot matrix output look as professional as possible. And does it! In some cases, you'd have to take a second look at a *Publishing Partner* page done on a good matrix printer to realize it's not 300 dot-per-inch laser quality.

And for those who need laser printer output, *Publishing Partner* performs fine when connected to, say, an Apple LaserWriter. And if you don't own a PostScript printer yourself, *Partner* can save your documents as PostScript files which can then be uploaded to systems that do have the proper equipment. Since *Partner* supports PostScript, you can print your documents on everything from a 300 dpi LaserWriter to a 2570 dpi Linotronic image setter.

Publishing Partner is not perfect, though. Still in its first revision, it has developed a few annoying bugs. For instance, if you play around too much with different fonts of different sizes, you may be pleasantly surprised by a system crash. It doesn't happen often, but it happens. Occasionally, a single pixel might appear on your page and refuse to be deleted. Not so bad, you think, until it's discovered that that single pixel will prevent the entire page from printing! You're sure to stumble upon other little quirks.

I'd also like to see some new features added to *Partner* as soon as possible. Automatic hyphenation using an algorithm and exceptions dictionary would be very useful. As would the ability to retain some style and format information from imported *First Word* text files. And text flow around regular and irregularly-shaped graphics would give users a great deal of flexibility in designing layouts. Finally, the ability to group text and graphics objects together would save a lot of time when moving large portions of a page.

Soft Logik plans to have a new version of *Publishing Partner* out by summer's end. I hope we can expect to see a few of these suggestions implemented in the new release. If Soft Logik wants its program to be state of the art, it's going to have to make these changes. The Mac and MS-DOS world are already enjoying the second and third generation of desktop publishing software. For the ST to compete with those systems, it's got to have strong software to build on.

But I have confidence in Soft Logik. It's working hard to make *Partner* as useful as possible. For example, it recently licensed a good number of PostScript fonts from a Mac developer called Century Software. It's also working with a small company called The Font Factory to distribute dot matrix *Partner* fonts and clip art disks. And perhaps the most exciting news is that Soft Logik will soon be selling a $99.99 scanner that works much like ThunderScan for the Macintosh. It's actually a fiber optic cable that attaches to the print carriage on a dot matrix printer. What you get is an extremely affordable 72 dpi scanner. Look for it in June, says Soft Logik.

So the ST is beginning to live up to its desktop publishing promise. *Publishing Partner* is the first sign of this, but certainly not the last. Spectrum HoloByte, for instance, has released a publishing package from England called *Fleet Street Publisher*. And you can expect to see more font- and clip art-related products popping up pretty soon. The ST still has a long way to go before it catches up with the Mac and MS-DOS publishing systems available. But it's definitely on its way.

And just a quick closing note. Atari is putting on an Atari Expo-type event this June 18 and 19 at the Santa Clara Convention Center. Fifty to 100 exhibitors are expected to be there, along with seminars, grand displays and give-aways. Tickets are $5 at the door for each day. You can call Atari at (408) 745-2000 for more info. See you there! ☐

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi>-on The WELL at (415) 332-6106.

INVENTORY OUT OF CONTROL?

Introducing Multi-Manager™

The best point-of-sales accounting program you can buy for your business

About **Multi-Manager**

Multi-Manager is a powerful, sophisticated system for management of your small to medium-sized retail and/or wholesale business. Why **Multi-Manager**? Not only does it help you manage multiple aspects of your business, but it also helps you manage multiple locations.

Created with dB-Man database development system from Versa-Soft, **Multi-Manager** is a menu based system, so you never need to memorize commands. There's even a built-in Help facility that refers you to the exact location in the Reference Manual to get more information about specific commands.

Here's **Multi-Manager's** main menu:

Invoice Manager	**Payroll Manager**
Vendor Manager	**Extended Manager**
Inventory Manager	**Super Manager**
System Manager	**Archive Manager**

Multi-Manager helps you manage four major aspects of your business: customer invoicing, vendor invoicing, payroll(employees), and inventory. You can use a computer system at the point-of-sales at every retail location to issue invoices, track inventory sold, and track employee hours and sales. Each sales record is coded with the employee's ID so you can get a tally of his or her sales for any time period, including a sales-per-hour average. If you also sell by mail order, the inventory list kept in any systems used in shipping can easily be coordinated with the one used at the point-of-sales.

The system can only be used by someone with proper password clearance. Each employee receives a password which he or she must enter before performing most of **Multi-Manager's** functions. There are nineteen different system functions for which each employee must be specifically cleared by you, the business owner--only you have this power.

When any business location receives new merchandise, use the Vendor Manager to enter the vendor invoice into the system, which automatically adds the newly received merchandise to the inventory database. When you need to transfer merchandise between two business locations, **Multi-Manager** automates the process fully with a floppy disk that's carried along with the transferred merchandise.

Multi-Manager's numerous report sections print out data you require for managing every aspect of your business. Most of **Multi-Manager's** reports let you set the period of time for the report (e.g. January through July 1987, June 1, 1987 through June 3, etc.).

Here are some of the report titles:

- **Sales Report**
- **Employee Report**
- **Employee Payroll Report**
- **Inventory List**
- **High Security Inventory List (includes your cost per item and totals your cost for inventory)**
- **Transfer Report**
- **Layaways Report**
- **Returns Report**
- **Vendor Invoices Report**
- **Re-order List**
- **Hot Mover List**

Multi-Manager does all the calculation and paperwork so you can produce timely financial reports any time you need them.

Multi-Manager's special features aid tremendously in easing the burden of all "little" tasks your business requires to keep it running smoothly. For example, when you enter new inventory items you can enter a different re-order point for each. Then, whenever you like, **Multi-Manager** prints out a list off all inventory items that are at or below their re-order points.

The Hot Mover list prints a list of your best-selling items--top ten, twenty, or any other figure you like! You can discount an entire category of merchandise by a common percentage amount set by you. You can also Package Sales consisting of any combination of inventory items. Then when you sell such a package you need only enter one part number!

Last, but by no means least, if your business has multiple locations, you can keep a master inventory of all locations at a central Super Manager computer system. The Super Manager also helps you coordinate inventories for each remote location separately. The Super Manager uses the invoice information stored for every transaction in each system to determine whether a store's inventory list is accurate--a fool proof method for detection of inventory tampering.

ALL THIS AND MORE ONLY $299.95!

San Jose Computer
1844 Almaden Rd.
Suite E
(408) **723-2025**

San Jose Computer
3248 El Camino Real
Santa Clara
(408) **247-0502**

B & C Computer Vision
3283 Kifer
Santa Clara
(408) **749-1003**

H & T Electronics
346 W. Maude
Sunnyvale
(408) **737-0900**

Fry's Electronics
541 Lakeside Dr
Sunnyvale
(408) **733-1700**

Works with these computers:
Atari 520/1040ST Computer with 2 SF314's, or SF314 and a hard disk.
Available soon:
Macintosh +/II/SE with 2 disk drives, or one disk drive and hard disk.
I.B.M. PC or Compatibles with disk drive and a hard disk.
dB-Man is a trademark of Versa-Soft, Multi-Manager is a trademark of New World Software.

NEW WORLD SOFTWARE
1654 San Tomas Aquino Rd.
San Jose
866-5003

The Report Report

By Warren Sirota

The *dBASE III+* CREATE REPORT command gives you a fairly easy way of extracting and printing out the valuable information stored in your databases. However, CREATE REPORT is neither particularly powerful nor flexible. It is limited to two levels of subtotaling and one report line per record. You cannot affect the basic report format; it's strictly "take it or leave it." As soon as your reports exceed the limits of the *dBASE* reporting facilities—and that may be the day after you start to use *dBASE* —you are forced into an ugly round of trivia, writing routines to keep track of when to insert page breaks into the already convoluted logic of your report. After a while, you evolve stock routines that take care of line counting and the like, but report generation never becomes convenient or pleasant. That is, unless you get help.

RELATIONAL REPORT WRITER

dBASE reporting help is at hand in a well-conceived and executed product called *Relational Report Writer* (*RR* for short), published by Concentric Data Systems, Inc. This *dBASE* companion product provides powerful and flexible reporting capabilities at the bargain price of $99, and may save you hours of work. Although there are certain types of reports which will still require hand-coding, this product can be useful in a wide variety of settings.

RR is a stand-alone program that can create reports out of *dBASE III* files. You work with it interactively, through a series of Lotus-style menus, to design the report. It helps you along at every stage of the game, letting you design complex reports by "pointing and clicking," or as close as you can come to that without a mouse. You can preview or print the report at any stage of the game, with two keystrokes from the master menu.

What about programmability? Concentric provides run-time modules which you can copy freely and distribute with your application. The RRUNTIME program, as it is called, is executed from within your program by issuing the command:

```
RUN RRUNTIME <options>
```

In fact, you aren't limited to calling RRUNTIME from *dBASE*. You can issue the RRUNTIME command from the DOS prompt, from a batch file, or from any other program that allows you to execute DOS commands. If you do issue the command from *dBASE*, you must have 190K of memory available beyond what *dBASE* needs. Similarly, if you're using *Clipper* you will need 190K of memory beyond that which is used by your program.

Relational Report Writer is a stand-alone program that can create reports out of dBASE III files. You work with it interactively, through a series of Lotus-style menus, to design the report.

The **options** to the RRUNTIME command consist primarily of a filename for what Concentric calls a **jobfile.** This allows you to tell RRUNTIME to produce a number of reports in a row, and can specify overrides for such things as the range of records to be used in the report, the output destination, and a few other relevant factors.

FIRST TEST

I tested *RR* on several reports. The first was a particularly tough report that I had written in *Clipper* for a client. The client was keeping track of a large number of slides, which were sometimes collected into presentations. I grouped this data into three tables:

- SLIDES, which held the slide ID number, the slide title, some text describing the slide (as a memo field) and other attributes.

- PRESENT1, which held presentation ID numbers, the presentation title and owner, and other attributes of presentations as a whole.

- PRESENT2, which holds the ordered list of slides for each presentation.

The idea of the report was to produce a script for each presentation. The script would consist of the presentation title, followed by an ordered list of slides in the presentation. Listed for each slide would be its ID, its title, and the text describing the slide.

From a *dBASE* standpoint, there are two problems with this report. The first is that PRESENT2 contains the key fields as pointers into both SLIDES and PRESENT1. Ideally, the file PRESENT2 would be related to both of the other files; unfortunately, *dBASE* does not allow a file to be related to more than one other file at a time. *Clipper* allows more than one such relation, so this wasn't a problem in my situation. *RR* also allows multiple relations. When you define a relation to *RR*, you also tell the program what to do if a lookup fails. In many cases, you will want to simply skip the record and go on to the next one, but in some cases the failure of a lookup will mean that something is wrong with the database. You have the option of telling *RR* which of these courses to take for every relation in the report.

So, *RR* handled the tricky relational aspect of this report neatly. I'm pleased to say that it also did quite well with the other tricky aspect, memo fields. Memo fields are very difficult to handle from within a programmed report, since *dBASE* gives you no way of knowing how long they are. The only practical means of formatting a complex report that contains memo fields from *dBASE* is to write the report to a file and then to read the file into a database consisting of 80-byte records using APPEND SDF. Cumbersome, to say the least. However, *RR* handled the memo fields almost without a snag.

There was only one thing that I tried to do with this report that I couldn't. When it encounters an empty memo field, *RR* doesn't print the field and doesn't print a blank line. This works out nicely. However, I wanted to offset my non-empty memos by surrounding them with a blank line on either side. I couldn't do it—I could get blank lines around my memo, but then they would also be there if the memo was empty, leaving blank lines between slide titles where I didn't want them. This is a fairly minor quibble, however.

SECOND TEST

RR didn't do so well, unfortunately, on my second test. This involved trying to recreate my billing report with *RR*. The stumbling block there was the inclusion of several different sets of detail lines within the same report—separate groupings for hours billed, flat fees, and amounts received. *RR* reports all have one set of detail lines, which may be separated into several groups, rather than detail lines coming from several different database files. I could have joined the detail lines into a single file and, with a little juggling, managed to "trick" *RR* into doing my report, but that seemed like too much trouble.

SUMMARY

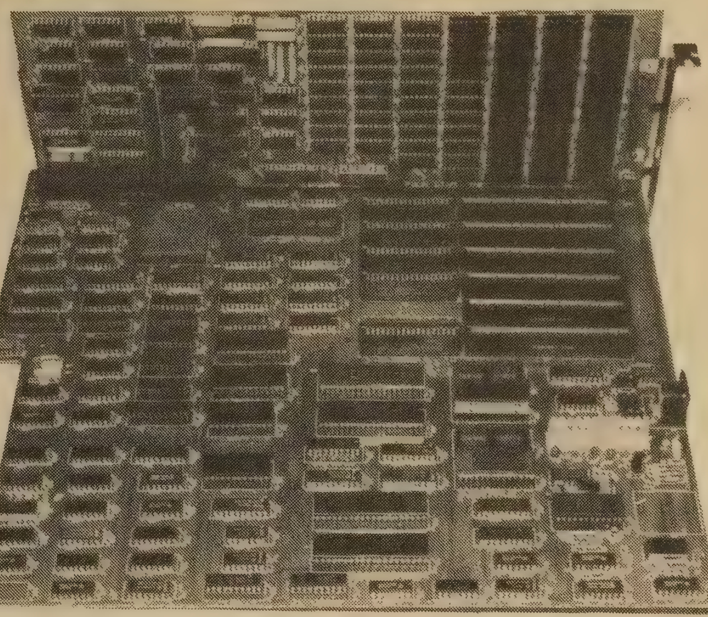
Relational Report Writer is a capable and flexible report generator which can be used by your programs or interactively by analysts. Communication of parameters to the runtime module and reports is somewhat awkward, but serviceable. Many standard and complex reports are handled well by this product, but it is still possible to come up with reports that are beyond its capabilities or that require pre-conditioning or restructuring of the data before sending it to the report writer. All in all, a good value. ☐

Copyright ©1987 by Warren Sirota. All rights reserved. *Warren Sirota is a database consultant with experience in a wide range of languages. He also composes and programs computer music. He lives in Oakland and can be reached at (415) 482-3979.*

Dealers, OEM and Corporate Accounts

The MICRONICS 386 Mother & Memory Board

- Compaq 386 Compatible
- Intel 80386 microprocessor
- 32 bit architecture
- 16 MHz processor speed
- Compatible with all popular XT/AT software and hardware like Lotus, AutoCAD, and many others
- Phoenix 386 or Award 386 Bios
- Four speed selection (16, 8, 6, 4.77 MHz)
- 1 Megabyte memory installed
- Sockets for additional 1 Megabyte of memory
- Connectors for attaching up to 10 Megabytes of memory
- Eight expansion slots
- One 32 bit memory slot supporting up to 10 Megabyte of RAM without taking an expansion slot
- Physical dimension and mounting hole positions are compatible with standard AT case
- 8 or 10 MHz 80287 Co-processor socket
- Real time clock
- Software availability to emulate expanded memory for Lotus 1-2-3, Symphony Etc.
- Design & Manufactured in U.S.A.
- One Year Parts & Labor Warranty



Evaluation Unit $1590

CALL FOR QUANTITY DISCOUNTS & MORE INFORMATION

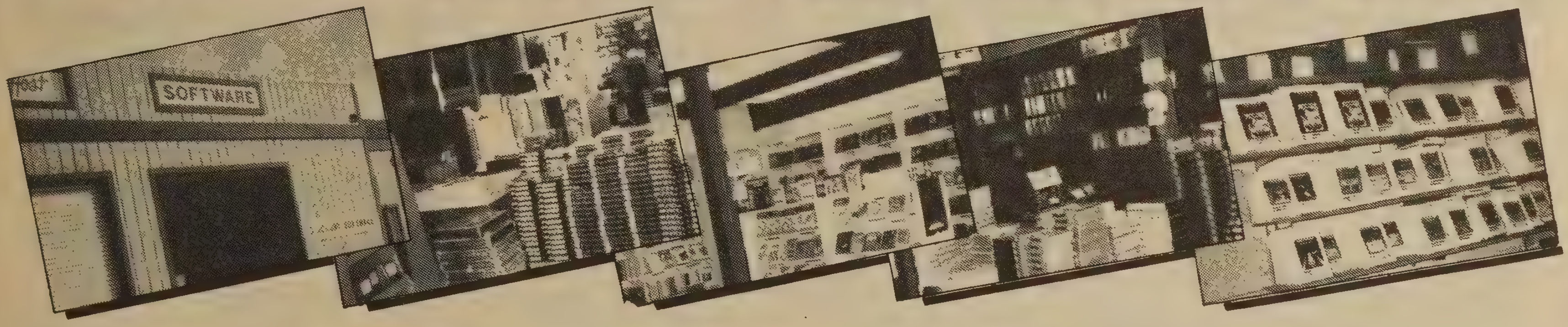
(415) 962-0102

(415) 962-8795 FAX

MICRONICS, INC.

110 Pioneer Way, Ste. D Mt. View, CA 94041

Fun With Dick And Jane



Jane: Look At All That Software—More Than Any Other N. California Outlet!

Dick: Come See How Cheap Herb Sells It! The Originators Of The 3 For $10 Tables

RUN SPOT RUN

And Bring This Ad

For 5 FREE Disks!

With any purchase over $25 and this ad. Offer good thru May 31, 1987

Herb's Discount Software
4406 A Enterprise Pl. Fremont
(off Grimmer Blvd.)
415-490-6335

Herb's Discount Software House
80 W. El Camino Real, Mt. View
(near 237 & 85)
415-967-5500

OPEN 7 DAYS A WEEK

E-Mail Economics

By Brock N. Meeks

The year was 1959 and the US Post Office was poised to deliver a service straight out of a Flash Gordon episode. That year, US Postmaster General Arthur E. Summerfield confidently announced: "Before man reaches the moon, your mail will be delivered from New York to California, to India, or to Australia by guided missiles. We stand on the threshold of rocket mail."

> **Picking the right E-mail service for your needs is no less confusing than choosing an alternate long-distance service. You have to compare rates, incentive services (such as volume discounts), customer support, and more.**

Obviously, something went awry on the way to the launching pad.

Though Summerfield missed the mark on his predictions, he was right about two things: mail service of the future would be fast, and it would use high technology. Both of those features are embodied in today's electronic mail (E-mail) services. However, E-mail services have proliferated to the point where it's hard to sort out which service is the best buy.

The variety of E-mail services you can choose from brings to mind the state of the telephone industry, and picking the right E-mail service for your needs is no less confusing than choosing an alternate long-distance service. You have to compare rates, incentive services (such as volume discounts), customer support, and more.

When comparing E-mail services, you have to look closely at rate structure—not all systems are created equal. This column examines the bottom line of four popular E-mail services: CompuServe's EasyPlex, MCI Mail, Western Union's EasyLink, and RCA Mail.

EASYPLEX

CompuServe's E-mail system is called EasyPlex. Charges for using EasyPlex are the same as when using any part of the CompuServe database. Rates are broken down into Peak (prime time) and non-peak (non-prime time) hours. For this comparison, tests were made during off-peak hours (6 pm to 7 am). Basic rates for EasyPlex are $6.00 an hour for 300-bps transmission, $12.50 an hour for 1200-bps transmission. (CompuServe also has rates for 2400-bps and 9600-bps, but for comparison purposes, only 300/1200-bps transmissions were used.) CompuServe also tacks on a $0.25 per hour connect charge to each of the above mentioned rates, bringing the total to $6.25 per hour for 300-bps and $12.75 per hour for 1200-bps access.

MCI MAIL

MCI Mail is unique among these four services because it doesn't charge for connect time. MCI Mail gives its users free access phone lines in 50 major cities. If you happen to live in a city that doesn't have one of these local access phone lines, you can access the service through an 800 number or via the Tymnet packet-switched network. MCI Mail does charge a connect fee you if you use one of these two options. The 800 number costs $0.15 per minute; Tymnet costs $0.05 per minute. (For this article a local phone line was used so connect rates were not a factor.) MCI Mail charges you by the "MCI ounce," which is 7,500 characters. Each "ounce" costs you a flat rate of $1. So a message of 15,000 characters will cost you $2. You should note that if your message is only one character over 7,500 you are charged for the full "ounce."

EASYLINK

Western Union's EasyLink charges $0.35 a minute for 300-bps service and $0.50 a minute for 1200-bps. (From midnight to 7 am these rates are cut by 40%. The discount rate is not used for this article's comparison.) Like MCI Mail, EasyLink is accessible via local phone lines. If your city doesn't have a local number you can use a nationwide 800 number; however, the 800 number tacks on an additional $0.30 a minute to your bill.

RCA MAIL

RCA Mail is a relative newcomer, but is rapidly gaining acceptance among E-mail users. RCA charges different rates for peak and off-peak hours. The business rate (7 am to 6 pm) is the most expensive at $14 per hour; off-peak rate (6 pm to 9 pm weekdays and 7 am to 9 pm weekends and holidays) is $7 per hour; night rate (9 pm to 7 am daily) is $4 per hour. These rates apply for both 300-bps and 1200-bps transmissions. These rates are for local access. If you can't get to a local telephone number an 800 number is available. Charges for using this 800 number, however, add substantially to the rates listed above. For this comparison, the off-peak rates were used. In addition, RCA charges an extra $.05 per unit. (Each unit equals 1,000 characters transmitted).

ONLINE BENCHMARKS

The following comparisons use three text benchmarks: a one-page business letter (about 2K in length), a four-page letter (10,000 characters), and a nine-page report (22,500 characters).

> **MCI Mail and EasyPlex have an interconnection capability, which allows EasyPlex subscribers to send E-mail to MCI Mail users and vice-versa.**

The one-page business letter equaled 2,500 characters. This is how the rates stacked for uploading the one-page business letter:

MCI Mail (300/1200-bps) $1
EasyLink (1:54 @ 300-bps): $0.66
EasyLink (0:24 @ 1200-bps): $0.20
EasyPlex (1:54 @ 300-bps): $0.19
EasyPlex (0:41 @ 1200-bps): $0.14
RCA Mail (1:54 @ 300-bps, including a two unit charge): $0.32
RCA Mail (0:41 @ 1200-bps, including a two unit charge): $0.18

The next test was using a four-page letter—about 10,000 characters. Costs for uploading this text were as follows:

MCI Mail (300/1200-bps): $2
EasyLink (6:04 @ 300-bps): $2.11
EasyLink (1:38 @ 1200-bps): $0.81
EasyPlex (6:40 @ 300-bps): $0.68

Copyright ©1987 by Brock N. Meeks. All rights reserved.
Brock Meeks is a San Diego-based freelance writer and columnist. He collects subscriptions to E-mail services. He currently has ten.

DEALERS & RESELLERS ONLY

SAMSUNG AT

- 6/8 MHz
- 0 & 1 Wait State
- 2 Serial Port
- 1 Parallel Port
- 1 Meg RAM

$1295

The 386 *originale!*

- 32 Bit architecture
- 16 MHz processor speed
- 8MHz 80286 Hard/software Compatible
- 1Mb RAM installed expandable to 2Mb with Piggyback even up to 10 Mb
- 1.2Mb Floppy Disk Drive
- Enhanced 12 Function Keyboard
- Made in Silicon Valley by SURAH

32 BIT

ONE YEAR WARRANTY

$2600

Complies with FCC industrial Class A

12 MHZ AT SYSTEMS CALL

8 MHz XT-Turbo Fully Operational FCC Class B Approved

WHOLE SYSTEM
$550

- 4.77/8MHz KB selectable
- 256K RAM on motherboard
- 2 Floppies + Controller Card
- Monographics Card + TTL Monitor
- 150 Watt Power Supply
- AT Style XT Key Board

DISK DRIVES

- 40 MEG
- 60 MEG
- 80 MEG
- 120 MEG
- 280 MEG
- 380 MEG
- 500 MEG
- 1 GIGABYTE

CALL

10 MHz XT-Turbo Fully Operational

BABY AT CASE

- 4.77/10MHz KB selectable.
- 256K RAM on mother board
- 2 Floppies + Controller Card
- Monographic card + TTL Monitor
- 150 watt Power Supply
- AT style XT keyboard

ONLY $599

UPGRADE your 286 computer to 386

386 Mother Board 1-2050, 2-4=2000, 5+1950

286 Accelerator Card $300

WE ALSO CARRY IBM COMPAQ OTHER SYSTEMS

- PRINTERS
- DISK DRIVES
- MONITORS
- ADD-ON CARDS
- EMULATION CARDS
- PERIPHERALS
- PLOTTERS
- TAPE BACKUP
- MODEMS
- NETWORKING
- I.C. CHIPS
- SOFTWARE

SURAH INC.

45461 Fremont Blvd., Suite #9
Fremont, CA 94538

(415) 651-5101
Telex: 5106017247 surah UQ

EasyPlex (1:55 @ 1200-bps): $0.40
RCA Mail (6:04 @ 300-bps, including a 10 unit charge): $1.19
RCA Mail (1:38 @ 1200-bps, including a 10 unit charge): $0.69

The last test consisted of sending a nine-page report—about 22,500 characters. Costs for uploading the report came to:

MCI Mail (300/1200-bps): $3
EasyLink (13:44 @ 300-bps): $4.78
EasyLink (3:27 @ 1200-bps): $1.72
EasyPlex (13:55 @ 300-bps): $1.42
EasyPlex (3:35 @ 1200-bps): $0.75
RCA Mail (13:44 @ 300-bps, including a 22 unit charge): $2.67
RCA Mail (3:27 @ 1200-bps, including a 22 unit charge): $1.49

OTHER CONSIDERATIONS

The choice would seem clear-cut: choose the system with the lowest costs. If only it were that easy. There are some other factors to consider.

Using a service such as CompuServe, for example, you have to "navigate" your way into the EasyPlex area. As you make your way into the E-mail section the meter is running. So even though it takes you only 41 seconds to upload your one-page business letter, it may have taken you a full two minutes to actually get set up to send that letter. Those two minutes fatten the actual cost of uploading that letter to $0.57. That extra $0.42 is your "online overhead." This online overhead applies to any system that charges you by the minute.

In addition to the online overhead, you must remember that each of the above examples was prepared offline, and then uploaded. Had I composed a one-page letter online it could easily have cost me several dollars. The important exception here is MCI Mail. Because MCI Mail doesn't charge for online time, you can compose your letters online without running up your tab. In this sense, MCI Mail has no "online overhead."

> **The choice would seem clear-cut: choose the system with the lowest costs. If only it were that easy. There are some other factors to consider–online overhead, additional services, etc.**

Although price is a prime factor for choosing an E-mail service, there are several other considerations. Each of the services mentioned here, for example, gives you access (at additional online charges) to news and information databases; the quality of the databases, however, varies. Each system also gives you telex capability. However, of the four E-mail services, only MCI Mail and EasyPlex have an interconnection capability. This interconnection allows EasyPlex subscribers to send E-mail to MCI Mail users and vice-versa.

All these statistics and comparisons really can't decide which system is best for your particular application. The best thing to do is use the figures here as a guide and then write the E-mail companies that interest you. Ask them to send you an information package. Compare features and talk with users of different systems; your final decision will be a combination of all these factors.

Resources

CompuServe EasyPlex
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, OH 43220
(800) 848-8990 (outside Ohio)
(614) 457-8650 (Ohio residents)

EasyLink
Western Union Telegraph
9229 LBJ Freeway
Suite 234
Dallas, TX 75243
(800) 527-5184

MCI Mail
2000 M. St. NW
Washington, DC 20036
(800) MCI-2255

RCA Mail
RCA Global Communications
201 Centennial Ave.
Piscataway, NJ 08854
(800) 526-3969

LOCAL AREA NETWORKS

Featuring NOVELL Advanced Netware

Novell Advanced Netware from:.................. G/NET = $1,895... ARCNET = $2,095.. ETHERNET = $2,695...... STAR LAN = $2,025.... PC-NET = $2,495

NOVELL Advanced Netware/286

Complete LAN Package
- Advanced Netware/286
- Runs on 286 *and* 386
- Includes Cards and Cables for 1 File Server & 2 Workstations
- On-Site Installation *FREE*

G/NET	$2,995
ARCNET*	$3,195
ETHERNET	$3,995

* PC Magazine Editors Choice

... And Hardware

File Server (1 ea)
10 Mhz / 0 Wait State 286
1 MB RAM, 80286-10 CPU
40 MB Hard Drive
Keyboard, Floppy, Monitor

High Tech. Work Stations (2 ea)
10 Mhz / 0 Wait State 286
1 MB RAM, 80286-10 CPU
1.2 MB Floppy, Keyboard, DOS 3.1
Monographics & Amdek 310A Monitor

High Speed NLQ Printer
Epson LQ-1000 or Toshiba 341e

Total Hardware Price: $6,995

286-10
0 Wait

ARCNET LAN System Special: $9,995

Precision Software Products

833 Market St. Suite 505
San Francisco, CA 94103

(415) 896-5464

P.S. We sell single user systems too!! ... The Management.

Incredible New Products

The Leading Edge® Infinite Memory System™

$1995.

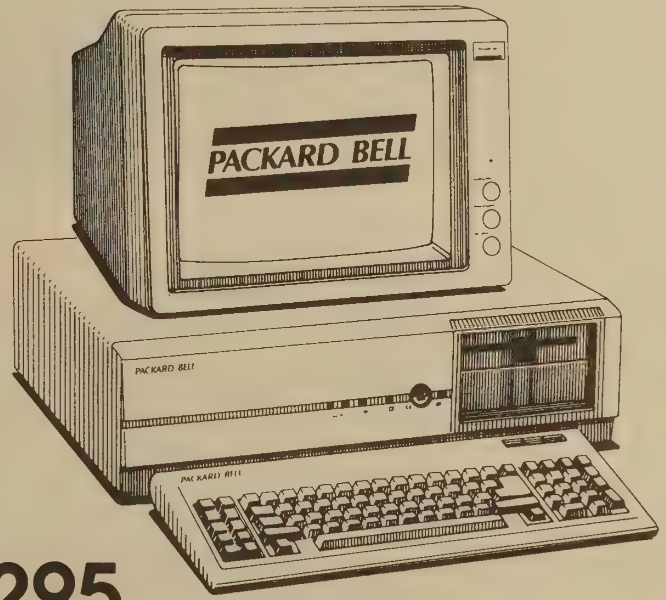
LEADING EDGE
AUTHORIZED RETAIL DEALER

System includes:

- 20 MB removable Hard Disk
- Turbo-Dual Speed 8088-2 Processor
- 512K RAM
- Monographic & RGB Output
- Monographics Monitor
- 2 Removable Cartridges
- MS-DOS & GW BASIC
- 15 Month Warranty

PACKARD BELL VT 286

(AT Compatible)



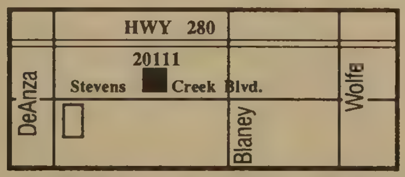
System Includes:

- 640K RAM
- 1.2 MB Floppy
- Monographics Monitor
- DOS 3.1 & GW BASIC

30 MB System	**$2295**
40 MB (Fast Access) System	**$2695**

Leading Edge and logo and Model "D" are registered trademarks and Leading Edge, Infinite Memory System, Infinite Memory Drive, Infinite Memory Cartridge, and IBM Compatibility Logo are trademarks of Leading Edge Products, Inc. Bernoulli Technology is a registered trademark of Iomega Corp. Hercules is a trademark of Hercules Computer Technology. IBM and Selectric are registered trademarks of International Business Machines Corp. MS-DOS and GW Basic are registered trademarks of Microsoft Corp.

Profitline Has Moved
20111 Stevens Creek Blvd, Cupertino



(408) 446-5511

ProfitLine Computers™

The Business Solution Experts

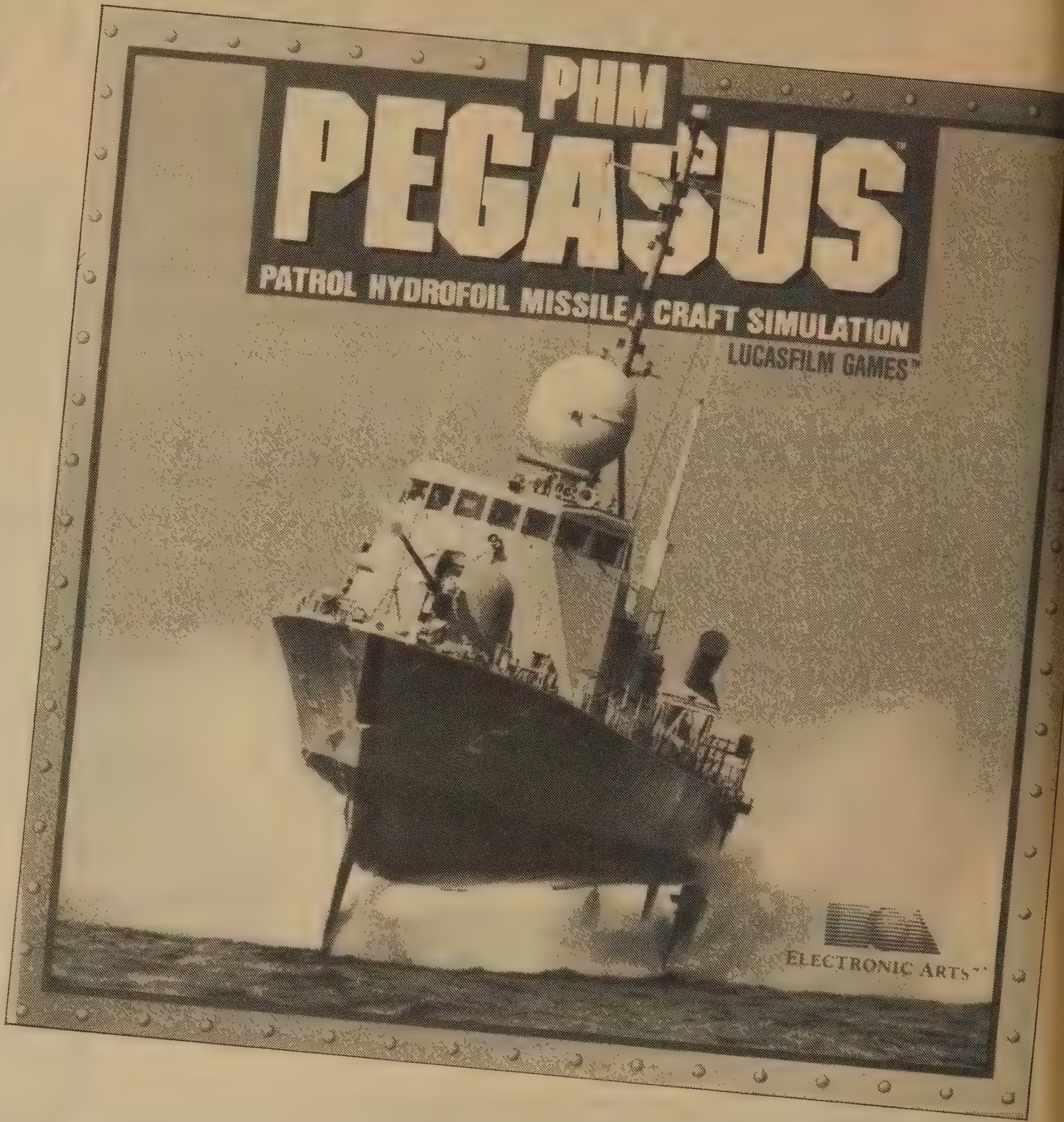
20111 Stevens Creek Blvd., Cupertino CA 95014

Between De Anza & Blaney

GAMES

PHM Pegasus

Designed by: *Lucasfilm Games*
Published by: *Electronic Arts (1987)*
For: *Apple II ($35), Commodore 64/128 ($30)*
Reviewed by: *Mike Markowitz*



More than just another "shoot-em-up," *PHM Pegasus* is a complex simulation of modern naval surface combat that puts the player right on the bridge of a Patrol Hydrofoil missile boat. Designed by Lucasfilm Games (creator of Ballblazer and Rescue on Fractalus, among others), the program has excellent graphics and snappy response to player input.

PHM Pegasus requires a 64K Apple with one drive. A joystick and color monitor are recommended. The program ran flawlessly on both the Laser 128 and the IIGS. The program is copy-protected, and uses both sides of a 5.25" floppy disk.

The hydrofoil is an exotic, high-tech warship that skims over the waves on the lift created by submerged "foils," which act exactly like wings. Since only the thin foils are subject to water resistance, the hydrofoil can reach very high speeds, even in rough seas. At low speeds they come down off their foils, and handle like ordinary ships. Built by Boeing, the Pegasus-class hydrofoils pack eight Harpoon missiles, an automatic cannon, a sophisticated radar, a gas turbine engine, two diesels and a crew of 23 men into only 200 tons. In some of the game scenarios, the player can take command of even smaller Israeli and Italian hydrofoils.

The game provides eight different missions, or scenarios, graded by increasing difficulty. The war zones include the Carribean, the Mediterranean and the Persian Gulf. In some situations you have the help of a friendly helicopter to spot targets over the horizon. Enemies include a variety of missile craft and small gunboats, mostly of Soviet manufacture. A dozen silhouettes of these vessels are printed on small cards so you can practice recognizing them. There are escort and surveillance scenarios that call for planning and judgement, rather than just mindless aggression.

PHM Pegasus provides several different ways to view your current situation, and the player must be able to switch between them quickly in order to survive and win. You can toggle between an Operations Map, showing the location of friends and enemies, and a Bridge view, which shows your control panel. Your radar scope can be switched to various ranges, from 2.5 to 40 miles. When targets are in sight, you can select one for a magnified view through your "binoculars."

The control panel is highly simplified, to reduce the player's information overload. There is still, however, a lot to worry about. A weapon status display shows missiles, shells and chaff rockets remaining. A graphic damage display indicates any systems or compartments of your ship that are impaired or destroyed. A gyrocompass shows your heading, relative to true North. There are gauges for speed, fuel and engine RPM. There are warning lights for shallow water (you are about to run aground) and incoming missiles. And above your radar scope, you have a window, with a view of the blue sea, the light blue sky, occasional whitecaps, shell splashes and any enemy vessels that happen to cross your path.

You can steer by moving the joystick left or right. Moving it forward or back changes your speed. Everything else is controlled from the keyboard. For example, "8" selects your missiles and Return fires one. "T" selects targets for viewing, and the Spacebar toggles between maneuver and weapons aiming modes. On the Operations map, some keys have completely different functions. Steering can be tricky at high speeds. The vessel does not respond immediately to the helm — your heading changes in discrete increments of 45 degrees and you may need to bear down on the joystick for a few seconds to click over to a new direction.

The experience of combat has been described as "hours of boredom, punctuated by seconds of terror." *PHM* allows you to skip through the dull parts by accelerating the time scale (up to a factor of 128!). When the action heats up, remember to drop back into real time, or you may be sunk in a blinding flash of incoming missiles before you have time to react.

Missile combat is simple, you fire 'em and forget 'em. When targets are hit, you can see the explosion through the "binoculars." Gunfire is more complicated — you are firing from a moving platform at a moving target. You have to toggle on the "aiming mode" and center a crosshair on the target, and adjust your fire with repeated shots. It may take quite a few hits to sink the larger enemy ships.

Proper use of Chaff is a key to survival in *PHM*. Chaff rockets travel a short distance away from your ship and explode in a cloud of foil strips that attract incoming missiles like a flame attracts moths. For best results, chaff should be fired when the missile is about a mile away, when you are moving at right angles to the missile. In practice, you will rarely be able to make such fine judgements.

The designers of *PHM* have taken a few liberties with the simulation. All radar-guided antiship missiles have a minimum range (to lock onto a target and stabilize their flight path) as well as a maximum range. In the game you have to estimate ranges from the radar display, and can easily shoot at targets too distant to hit. In reality the fire control system gives the commander exact range and bearing information, and will not let him waste shots on targets that are out of range. The game will not allow you to fire missiles at targets in your rear quadrant—but most modern antiship missiles can "make a U-turn" in the air with no difficulty.

A 26-page manual is packed with background information and tactical hints. The "command summary" card is too small, and poorly designed. If you lose it, you're out of action, because the controls are not explained anywhere else.

The Navy's 6 PHM's are orphan ships. The Navy didn't really want them. The Navy doesn't like small ships, fearing that it will be hard to get appropriations for billion-dollar big ships if Congress gets the idea that inexpensive 200-ton vessels can do useful sea control duty. Small-ship enthusiasts are reduced to making their case indirectly —through computer games, for example. A "flight simulator" for a boat may be an unlikely nomination for the best game of the year, but *PHM Pegasus* gets my vote. Wargamers have been waiting for a game like this for a long time. (Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404, (415) 572-ARTS.)

PRICE BREAKERS

OUR GUARANTEE:

**We Honor All Other Advertised Prices
With At Least $10.00 Off
On The Same System Configuration***

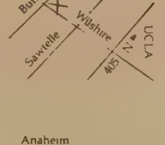
SYSTEMS

XT (4.77 Mghz)
XT TURBO (4.77/8 Mghz)
XT BULLET (4.77/10 Mghz)
AT 286 (6/10 Mghz)
AT MINI 286 (6/8 Mghz)
XT/AT PORTABLE

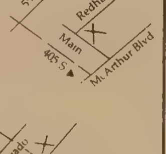
™Business Centers
United Computer Resources

AMERICAN EXPRESS Cards Welcome · master charge THE INTERBANK CARD · VISA®

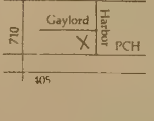
12007 Wilshire Blvd.
Between Bundy & Sawtelle
Santa Monica, CA 90404
(213) 473-5668
(213) 473-6710



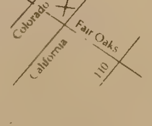
17985 Sky Park Circle #C
Main St. Corner
Redhill St.
Irvine, CA 90714
(714) 250-9029
(714) 250-9032



1301 A.W. Gaylord Ave.
Long Beach, CA 90813
Tel: (213) 491-0640
(213) 436-8515
(213) 436-8619



450 S. Fair Oaks Ave.
Pasadena
(818) 440-9821
(818) 440-9822



* IBM XT, AT is a trademark of International Business Machines
* Limited to Product Availability

* UNIT SHOWN FOR ILLUSTRATION PURPOSES ONLY

FREE COMPUTER WINNER

Ki Jun Park, San Jose

Look For Our Next Give Away

ATROSE
$1199
Mono System

XTROSE TURBO
$535
Mono System

Complete system
(Ready to Use!)
FCC Class B
Quantity discounts
Made in USA!

10 Mhz add $50

Ask us about
our Leasing Program.

Complete System
(Ready to Use!)

FCC Class B
70% Faster

FEATURES:

- IBM AT™ compatible, Runs all major software
- 80286 CPU, runs at 6 or 8 Mhz
- 512K standard, expandable to 1024K
- Hard disk/Floppy controller
- 1.2MB Floppy
- 8 Expansion slots
- 192 watt power supply
- Clock/Calendar with battery backup
- One Year Limited Warranty
- High Resolution Amber monitor (differs from photo)
- AT™ Style keyboard (maxi switch)
- High resolution Monographic card
- Parallel port
- Full documentation and manual

FEATURES:

- 8088-2 CPU, runs at 8 or4.77 Mhz
- 256K standard, expandable to 640K
- Floppy disk and Adapter
- 150 watt Power Supply
- 8 Expansion slots
- High resolution Amber monitor
- Mono card with Printer port
- XT style keyboard
- Manuals
- One year limited warranty

ATROSE ENHANCER

EGA SYSTEM

- EGA Color Monitor
- EGA Adapter

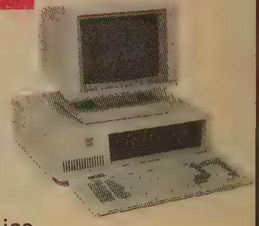
$1695

TURBO XTROSE HARD DISK

FEATURES:

- 256K, 4.77/8 Mhz
- 360K Floppy
- Floppy Adapter
- 150 watt Power supply
- IBM style keyboard
- 20MB Hard drive
- High resolution Mono monitor
- Mono Graphics with printer port

$899

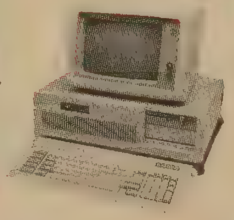


ATROSE HDA

HARD DISK SYSTEM

(Same as ATROSE with 20MB Seagate* Drive)

$1525



TURBO XTROSE ENHANCER

- 256K Turbo
- Floppy Adapter
- EGA Adapter
- EGA monitor
- Keyboard

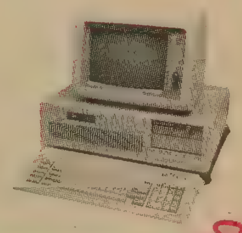
$995

ATROSE EGA HDA

EGA HARD DISK SYSTEM

- 20MB Seagate
- EGA Adapter
- 14" EGA Color monitor
- Princeton HX 12E with tilt and swivel add $50

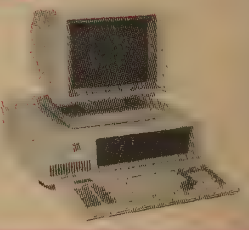
$1995



TURBO XTROSE EGA HDA

- 360K Floppy
- EGA Adapter
- EGA monitor
- Keyboard
- 20MB Hard disk
- Princeton HX 12E with tilt and swivel add $50

$1375



ROSE HILL SYSTEMS

No Surcharge for VISA or MasterCard

Terms: Cash, VISA or MasterCard, C.O.D. and Company Check on approval. Because of our Low Price, all sales are final. A 15% charge will be applied for all unauthorized returns.

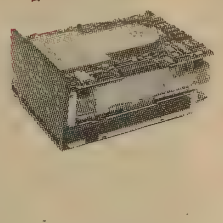
5353 Scotts Valley Drive, Scotts Valley, CA 95066
CA CALL: **(408) 438-3871**
Outside CA Call: **(800) 248-ROSE**
Tech Support: **(408) 438-3939**

*IBM, AT, XT are registered trademarks of International Business Machine Corporation. Hayes, Brother and Seagate are registered trademarks of Hayes MicroComputer Products, Brother and Seagate technology, Inc.

Seagate 20MB Kit
$319

AT HARD DISKS

With cable, software and manual



• ST4026 20MB (40 ms)	**$499**
• ST4038 30MB (40 ms)	**$549**
• ST4051 40MB (40 ms)	**$675**
• ST251 40MB (40 ms)	**$599**
• ST4096 80MB (28 ms)	**$925**
• Toshiba 72MB (25 ms)	**$999**

MODEMS

Hayes and Bell compatible
Free BitCom software

• 300/1200 Internal with software and manual	**$109**
• 300/1200/2400 Baud with software	**$199**

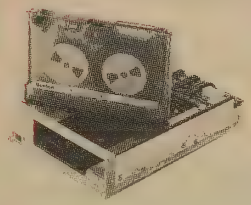
AT CARDS (Memory)

• M/I/O EMS, 1MB, 0K	**$159**
• RAM 3000, 3MB, OK	**$150**
• MIO (serial and parallel) 2MB of RAM, OK	**$148**
• M/I/O 2MB	**$139**

AT CARD

• Mini I/O card (serial and parallel)	**$50**
• Hard disk/Floppy controller	**$150**
• Mono Adapter	**$90**
• EVEREX Edge	**$215**

TAPE DRIVES



	Int.	Ext.
• 20MB TEAC cassette	**$580**	**$680**
• 60MB Wangtek cartridge	**$757**	**$827**

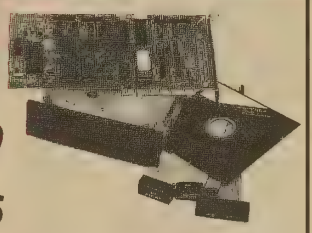
EGA COLOR CARD

$178

80286 TURBO BOARD 0K

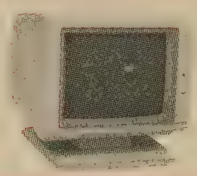
$349

HARD DISK KITS



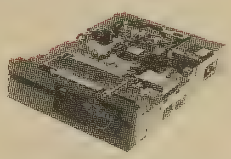
• 20MB Seagate ST225 with controller, cables, software, and Manuals	**$319**
• 30MB Seagate ST238	**$355**

MONITORS



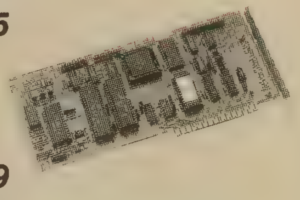
• High Resolution Mono monitor	**$95**
• EGA Color, 14" monitor	**$450**
• 14", High resolution Mono monitor	**$139**

FLOPPY DRIVES



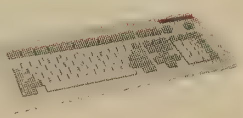
• Fujitsu 360KB	**$85**
• Fujitsu 1.2MB	**$120**
• TEAC 360K	**$99**
• TEAC 1.2MB	**$135**
• Beige Bezel	**$7**

XT CARDS



• MIO, clock/Floppy adapter	**$79**
• MIO, ser, par, clock	**$55**
• 576K Memory	**$55**
• 576K Multi/IO	**$130**
• 2MB EMS	**$99**
• 1MB EMS M/I/O	**$159**
• Floppy/HD controller	**$120**

KEYBOARDS



• 5150 style keyboard	**$45**
• 5151 style keyboard	**$70**
• AT™ style keyboard	**$70**
• AT™ Enhanced-keyboard	**$99**

MISCELLANEOUS

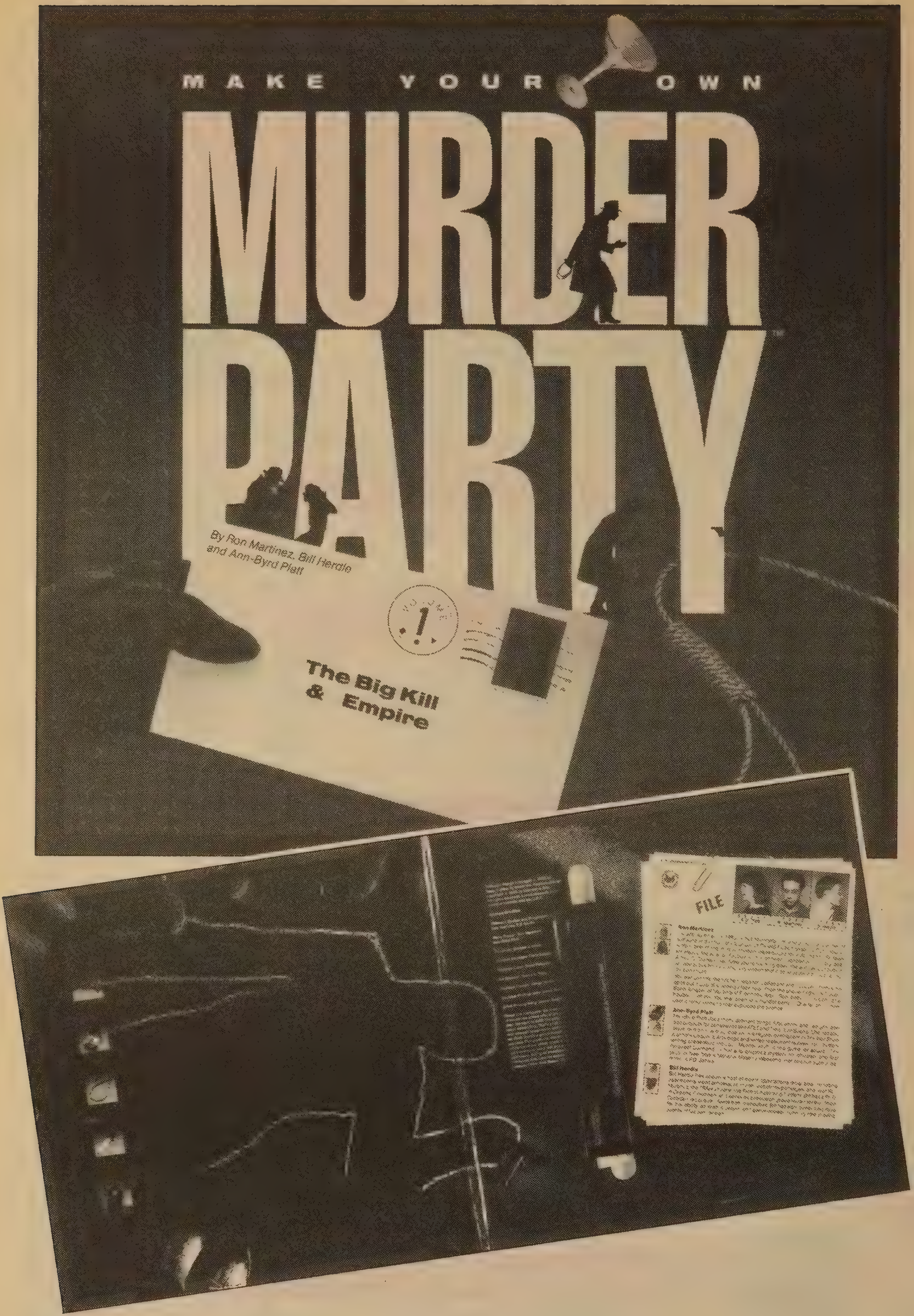
• MS DOS 3.2 w/GW Basic	**$85**
• Parallel printer cables	**$9**
• Dynatech DS4 Surge protector	**$69**
• XT Turbo motherboard	**$99**
• XT 150 watt power supply	**$69**
• 3 Key mouse with software	**$89**

ROSE HILL SYSTEMS

CA Call (408) 438-3871

Outside CA Call (800) 248-ROSE

Tech Support
(408) 438-3939



Make Your Own Murder Party

Published by: *Electronic Arts*
For: *Commodore 64/128*
List Price: *$32.95*
Reviewed by: *Sue Albert*

If you find that your entertaining is getting a bit stale why not pump a little life into your next party with a properly planned and skillfully executed murder. Electronic Arts has a program that will guide you through this awesome task from invitations right down to planting the smallest clue.

This is not an actual murder of course, but a fantasy dramatization in which you and all your guests play the parts of suspects in up to eight variations on two classic murder mystery situations.

The three programmers of *Murder Party*, two of whom are also mystery writers, have cleverly covered every possible detail just like the proverbial "perfect crime."

You type your guest list with addresses and a small personal characteristic of each and your printer supplies you with invitations which give each guest a unique, personalized sketch of the character they are to play, a profile of the other guests characters, and of course the plot leading up to the murder. There is also a page called "The Bitter Truth" which exposes each person's secret motives for being a suspect and each games actual guilty party. The program will then print out the envelopes and save all the information until you are ready to print out the "clue" booklets which act as a script for the party. All this may be done in advance so the computer is not needed at all during the party.

The hosts are put on their honor not to look at the "Bitter Truth" sheets so everyone can stay in character and enjoy solving the mystery. The individual clue booklets tell guests what they should try to conceal and what they must reveal during each round of the game.

When I said the authors thought of everything, I meant everything! They suggest dinner be served between rounds. The manual, itself written in amusing mystery book style, suggests menus to fit the mood of each plot and even, if I know my onions, several very good recipes.

Suggestions are made for interesting alternative party sites, decor, costuming, background music, sound effects, and how to direct the whodunnit to the most enjoyable conclusion.

I found this program performs as it promises with a manual well organized and easy to understand and follow. It is flexible enough to be used many times as well as covering latecomers, the uninvited and no-shows.

So some dark and stormy night, dim the lights, gather your best friends and show Agatha how it's done in this new electronic age.

BOOKS

Jet Fighter School

Air Combat Simulator Tactics and Maneuvers

By: *Richard G. Sheffield*
Published by: *COMPUTE! Books (1987)*
List Price: *$9.95 178 pages, softcover*
Reviewed by: *Mike Markowitz*

Bogey at six o'clock—the thought makes your skin crawl inside your flight suit, as you twist and turn to try to spot the enemy aircraft on your tail. If you don't do exactly the right thing, your multi-million dollar F-15 Strike Eagle is going to be a heap of metal shards scattered across the desert.

You know what to do. Hit the afterburners, pull back on the stick and climb for the clouds. Roll left and arm a Sidewinder. He's overshooting—he's in front of you now. A cruel grin crosses your face as you fire, and watch another Mig disintegrate. You reach for another chocolate chip cookie from the heaping plate beside your computer, and take a deep swig of cold, white milk.

You knew exactly what to do. You read *Jet Fighter School* by Richard G. Sheffield, a delightful book of tips, hints and tricks for flight simulator addicts. Written for players of the best-selling *F-15 Strike Eagle*, from MicroProse, it would also be helpful for players of *JET* (from SubLogic), *High Roller* (from Mindscape) or *Mig Alley Ace* (MicroProse), among others.

Chapters cover the history and background of the F-15, gun and missile weapons, offensive and defensive fighter maneuvers, bombing techniques, and what to do when you're all alone and two enemy fighters gang up on you.

If you grew up around airbases you probably acquired an intuitive understanding of air combat maneuvering from watching the way that fighter jockeys talk with their hands. If you didn't, all the dynamic, three-dimensional terminology of breaks, yo-yo's, barrel rolls, and split-S's can be baffling. Actually doing this stuff on a flight simulator, without tactile feedback from the joystick or the feel of the g-forces squashing you into your seat, can be even harder to visualize. *Jet Fighter School* provides clear, simple illustrations, similar to the "ribbon diagrams" used in training fighter pilots.

Although the book presupposes some familiarity with computer flight simulators, it can be read with enjoyment by anyone interested in modern air combat. There is a good index and a recommended reading list. (Compute! Books, P.O. Box 5406, Greensboro, NC 27403, (919) 275-9809.)

JAN. 22, 1987

ON Jan. 22, 1987, COMTEX MICROSYSTEMS was asked to bid on 25 IBM compatible systems, at the request of the Department of Chemistry of a major PAC 10 University.

Even though our systems had MORE features than the request for bid specified, our bid was beaten by just under $70 per unit.

WHY DO WE BRING THIS UP?

Of the 25 systems delivered, since the delivery date:

3 have had **BAD POWER SUPPLIES**...

1 had a **BAD CPU**...
1 had a **BAD FLOPPY DISK DRIVE**...

1 had a **BAD MONITOR**...

THAT'S AN ALMOST 25% FAILURE RATIO!!!

THE POINT COMTEX WOULD LIKE TO MAKE IS...that the best value is **NOT NECESSARILY THE ONE WITH THE LOWEST PRICE!**

Comtex uses ONLY:

- 150 Watt **HEAVY DUTY** Power Supplies by **SEESONIC**
- Only **TOSHIBA** FLOPPY DRIVES (12,000 hrs. life expect.)
- ONLY the **PHOENIX BIOS.**

FINALLY, COMTEX has been manufacturing QUALITY systems **SINCE 1982!!**

We just thought you'd like to know, the next time you go looking for a system to buy.

COMTEX

519 San Vicente Blvd. Santa Monica, CA 90402

Call For The Name
Of The Dealer Nearest You
(213) 394-3580

TEACHING PROGRAMS

Learning DOS

Published by: *Microsoft*
List Price: *$49.95*
Reviewed by: *Wayne A. Yacco*

We always knew that it was easy to learn DOS, we just didn't know how to go about it. Finally Microsoft itself has provided the ultimate solution. The gnomes who labor in the bowels of Redmond have taken the interface from the renowned training program for Microsoft *Word* (release 3.10 is the latest incarnation) and developed an application to teach DOS. *Learning DOS* uses the same, rather excellent, training program to introduce the user to all of the subtle nuances of the DOS operating system.

This program, like its predecessors, the keyboard and mouse versions of *Learning Microsoft Word*, uses the concept of programmed instruction to repeatedly test and retrain a user in the areas that have not been retained after initial training. It is possible to suspend the program and return, later, to proceed from that very point. The program is designed to store the restart checkpoint for several users, allowing many individuals to interlace their training schedules.

Included, with the four diskettes provided, and two versions of the tutorial, one each for floppy- and hard-disk based systems. There is also one diskette each for a *DOS Quick Reference* and a *DOS Sampler* of Microsoft business software. The latter is essentially a commercial for a little-known software vendor from the state of Washington.

Learning DOS is composed of "How to Use This Course," "What You Can Accomplish With DOS," "Using DOS," "Practicing What You've Learned," and the "Review Index." The Review Index allows one to return to any portion of the lessons which requires more study. All the other lesson titles are self-explanatory with the further exception of Using DOS, which leads to several deeper levels of menus, eventually providing lessons for individual topics. The topics each address a data-processing operation, not individual commands.

Available nearly any time is the control bar. Its functions, such as Quit, Back, Hint, Index, Menu, Practice, etc., are accessed by holding down the CTRL key and typing the function's first letter. This makes it simple for the user to tailor the material and pace to individual needs. Left on its own, the program inexorably takes the user through every conceivable facet of microcomputer operation.

The only criticism that might be leveled at *Learning DOS* is that its slow pace cannot be speeded up to suit the requirements of fast readers or those familiar with most of the material. This will problaby not be a problem for the beginning user. It is possible to further slow screens because progress waits for the user to occasionally strike the space bar.

The DOS Quick Reference is for users who, once they've grown accustomed to DOS, become impatient with the training program but still need help sometimes (i.e., all of us). Typing HELP enters the first menu screen of basic DOS commands and topics. A second screen lists advanced commands and topics. The menu is primitive, requiring the user to type in the command rather than allowing it to be selected with the cursor, but the reference is effective. Where appropriate, a command's explanation includes cross references to related commands and topics.

While technically accurate, the Quick Reference does not provide much beyond what is available in the manual. The explanation of the /b switch for the copy command should be clear to any mathematician, engineer, or computer scientist, but may still baffle a typical business user. It would have been simple to give an instance of when and how it might be used.

Any new user will find this an invaluable aid and a constant companion at the computer. At about the price of an hour's technical support, it is a genuine bargain.

BOOKS

Command Performance: Microsoft Excel

Written By: *Douglas Hergert*
Published by: *Microsoft Press (1986) 532 pages*
List Price: *$24.95 softcover*
Reviewed by: *Jim Wolcott*

Since its release in September, 1985, Microsoft's *Excel* has established itself as *the* multi-megaton spreadsheet for Apple's Macintosh computer. And since that release, more than a comfortable armload of books have appeared offering hints, tips, how-to's, and shortcuts for making the most of this landmark program.

Of course, with that much power and complexity, even users who spend their workday in front of an *Excel* screen will frequently dive for their reference manuals. The problem is that oft-needed information is usually buried deep within chapters presenting a general topic. In a quick reference situation, it's tough to remember whether that page-formatting command is listed under "Page Setup," "Set Print Area," or somewhere else entirely. True, *Excel* features an excellent on-line "Help" menu, but help menus just don't have enough room to illustrate useful examples.

What's been needed for power-programs like *Excel* is a different kind of manual: a directory of concise reference material, coupled with brief examples for each of the features. Organized in a way that information would fall to hand as easily as opening a book.

Enter Douglas Hergert's *Command Performance: Microsoft Excel.* Hergert has extracted most of the information contained in Microsoft's original software manual, and arranged it alphabetically: an encyclopedia of *Excel*'s features.

Facilitating the "information at a glance" format, each of the entries in the book is identified with an icon—in this case, a dark-red graphic that denotes the entry's category. Entries are identified as being associated with pull-down menu commands (for either general menu-bar commands or chart commands), worksheet functions, macro functions, and special "dictionary entries" which give information on fundamental terms and nomenclature.

Each entry contains five basic units of information: Format, Description, Procedure, Example, and Comments. "Format" (for cell functions) is a representation of how the entry would appear within a cell formula. "Description" offers a brief explanation of the features, requirements and usage of a menu command or function. "Procedure" lists the step-by-step process to execute a particular command. "Example" is just that: an example of how the entry might be used within a spreadsheet. "Comments" includes additional information that relates to the entry, and usually has some suggestions on how to use the item in harmony with other *Excel* features.

The book is also lavishly cross-referenced with a system to locate the "Dictionary" entry about a specific topic, and to locate pages containing additional information about particular features.

It should be pointed out that *Command Performance: Microsoft Excel* is not a beginner's guide to using *Excel*. It's not intended to be. The examples lack the depth and explanations necessary for first-time users to grasp basic spreadsheet concepts. However, this book serves as an excellent springboard for PC users already familiar with spreadsheet topography, who are just becoming acquainted with Excel's horsepower. For those already familiar with Microsoft's definitive spreadsheet, database and charting software, *Command Performance: Microsoft Excel* is an indispensable reference tool for making the most of seldom-used features. (Microsoft Press, 16011 N.E. 36th, Redmond, Washington 90873.)

WORD PROCESSORS

For Comment

Designed by: *Mark U. Edwards, James A. Levine and D. Midian Kurland*
Published by: *Brøderbund (1986)*
For: *IBM PC and compatibles (256K, DOS 2.0 or higher, most popular word processors, networks, and printers are supported; color monitor desirable, not copy-protected)*
List price: *$195*
Reviewed by: *Mike Markowitz*

The term "paperless office" is one of those blatant self-contradictions, like "jumbo shrimp," "popular culture," or "compassionate editor." One of the things that has always made the idea of the paperless office illusory is the necessity to circulate paper copies of documents up and down the chain of command to gather vetos, legal opinions, approvals, and other sorts of comments.

For Comment is a new utility program from Brøderbund that creates a software environment for office politics. It is the word-processor equivalent of 3M Post-It notes (those sticky yellow things invented to make a writer's dismal existence yet more miserable) that brings us closer to the day of the paperless office.

Using *For Comment*, an author can circulate copies of a document to as many as fifteen reviewers. The copies may be on disk, or just files on a network. Each reviewer may comment, suggest revisions, or write his own little essay into an individual Notepad. There is an elaborate system of security levels and passwords, so that high-status drones can say rude things about the work of low-status drones without fear of reprisal (unless, perhaps, the low-status drones are skilled at disassembling code).

The basic screen display consists of two windows: an upper window for text and a lower window for comments. The relative size of the windows is easily adjusted. A two-line menu bar follows the familiar style of *Lotus 1-2-3*: selections can be made by simply pressing the first letter of the option's name or by using the arrow keys to highlight a desired option. The program can also be customized according to your hardware configuration, screen color preference and keyboard habits.

A Utility Disk contains a vast collection of printer drivers and some sample files. The lack of copy-protection makes it easy to install *For Comment* on a hard disk and to duplicate the Reviewer

Your #1 Source For Discounts!

Call For
Programs
Not Listed

Call Now-Toll Free 1-800-225-3034 CA.

Mon.-Fri. 8:30-6:00
Sat. 9:30-5:00

Lotus 123	$297
dBase III +	$379
Fastback	$85
NEC Multisync	$539
Vega Deluxe	$329
Ventura Publisher	$479

SOFTWARE

• alpha software	
ALPHA 3	210
KEYWORKS	52
• american small business	
PRODESIGN II	109
• american mitac	
PLAYBACK	29
• ann arbor softworks	
FULL PAINT (MAC)	59
• ansa software	
PARADOX	385
• ashton-tate	
dBASE III +	379
dBASE III + LANPACK	549
FRAMEWORK II	385
RAPIDFILE	229
• bps	
OVERHEAD EXPRESS	54
• borland software	
REFLEX	82
SIDEKICK NCP	49
REFLEX WORKSHOP	42
REFLEX (MAC)	57
TURBO PASCAL W/BCD-80/87	57
TURBO GRAPHIX TOOLBOX	35
TURBO EDITOR TOOLBOX	42
TURBO DATABASE TOOLBOX	37
TURBO LIGHTNING	55
SUPERKEY	42
NUMERICAL TOOLBOX	57
TURBO PROLOG	57
TURBO BASIC	57
EUREKA EQUATION SOLVER	57
TURBO "C" COMPILER	57
• breakthrough s/w	
TIMELINE	221
• broderbund	
PRINTSHOP	35
PRINTSHOP GRAPHICS 1	27
PRINTSHOP GRAPHICS 2	27
PRINTSHOP COMPANION	32
TOYSHOP	36
• bourbaki	
1 DIR +	53
• bytel	
GENIFER	197
• central point software	
COPY TO PC IBM	21
PC TOOLS	21
COPY TO PC-OPTION BOARD	77
• compuserve	
COMPUSERVE STARTER KIT	20
• computer associates	
ALL ACCOUNTING	CALL
SUPERCALC 3	CALL
SUPERCALC 4	252
SUPERPROJECT PLUS	255
• consumer software	
SPREADSHEET AUDITOR	79
• cosmos	
REVELATION	435
R. NETWORK BUMPDISK	242
• dac software	
DAC EASY ACCOUNTING	49
DAC EASY PAYROLL	32
DAC EASY BASE	32
• daybreak tech	
SILK	83
• decision resources	
CHART MASTER	202
SIGN MASTER	130
DIAGRAM MASTER	185
MAP MASTER	218
• delta tech.	
DIRECT ACCESS	51
• design software	
DS BACKUP PLUS	45
DS RECOVER	27
• digital research	
GEM COLLECTION	110
• executive systems	
X TREE	30
• fifth generation	
FASTBACK NCP	85
• funk software	
SIDEWAYS	35
• generic cad	
GENERIC CAD	54
AUTOCONVERT	19
AUTODIMENSION	29
DOTPLOT	19
FIRST CADD	27
DRAFTING ENHANCEMENTS 1	27
ELECTRONIC SYMBOLS#1	27
• headlands communications	
PC TALK 4	59
• infocom	
CORNERSTONE	69
ALL GAMES	CALL
• imsi int'l.	
DR. HALO II	67
DR. HALO II W/MOUSE SYSTEMS MOUSE	99
• intersecting concepts	
BACKUP MASTER	42
• javelin corporation	
JAVELIN	129
• lifetree s/w	
VOLKSWRITER 3	159
• living videotext	
THINK TANK	95
MORE (MAC)	141
• lotus development	
LOTUS 123	297
SYMPHONY	424
HAL	104
MANUSCRIPT	359
FREELANCE PLUS	352
LOTUS METRO	67
• mark elfield assoc.	
FAST TRAX	42
• m.d.b.s.	
KNOWLEDGEMAN II	280
• logitech inc.	
LOGIMOUSE W/+ PAC S/W	89
LOGIMOUSE W/+ PAC S/W & PC PAINTBRUSH	107
LOGIMOUSE W/+ PAC S/W & GENERIC CAD	135
LOGIMOUSE W/+ PAC S/W (BUS VERS.) W/CARD	99
• meca	
MANAGING YOUR MONEY	107
• meridian	
CARBON COPY	104
• micropro int'l.	
WORDSTAR PROPACK "NEW VERSION 4"	229
WORDSTAR 2000	229
WORDSTAR 2000 +	269
• micrografx	
PC DRAW	191
WINDOWS DRAW	151
WINDOWS CLIPART	59
IN-A-VISION	259
• microrim	
R:BASE 5000	249
R:BASE SYSTEM V	319
R:BASE GRAPHICS	157
CLOUT 2	130
• microsoft	
WORD	245
WORD (MAC)	231
EXCEL (MAC)	219
MACRO ASSEMBLER	85
WINDOWS	62
"C" COMPILER	247
MULTIPLAN	114
QUICKBASIC COMPILER	62
BUSMOUSE	105
SERIAL MOUSE	115
WORKS (MAC)	169
FLIGHT SIMULATOR	31
ACCESS (COMM)	139
CHART	165
PROJECT	215
• microstuf	
CROSSTALK 16	95
• migent	
ABILITY	57
ENRICH	212
MIGENT POCKET MODEM	129
• monogram/tronix	
DOLLARS & SENSE	99
• mosaic software	
THE TWIN	47
• multimate int'l.	
MULTIMATE	197
MULTIMATE ADVANTAGE	249
• nantucket	
CLIPPER	349
• paperback software	
VP PLANNER	55
VP INFO	54
• paul mace software	
MACE + UTILITIES	50
HTEST H FORMAT	47
• personics	
SMARTNOTES	49
• peter norton	
NORTON UTILITIES	49
NORTON COMMANDER	39
ADVANCED NORTON UTILITIES	77
• popular programs	
POP-UP DESKSET	39
• prosoft	
FONTASY	39
ADD ON FONTS #1	30
ADD ON FONTS #2	30
ADD ON FONTS #3	30
• quarterdeck	
DESQVIEW	63
• rosesoft	
PROKEY	73
• simon & schuster	
TYPING TUTOR III	30
FULLY POWERED PC	22
• sterling software	
INTELLIGENT BACKUP	79
• softlogic	
CUBIT	27
DISK OPTIMIZER	27
DOUBLE DOS	27
S/W CAROUSEL	27
• softstyle	
PRINTWORKS (LASERS)	71
PRINTWORKS (DOTMATRIX)	42
• software directions	
PRINT Q	65
• software publishing	
PFS: PROFESSIONAL WRITE	105
PFS: PROFESSIONAL FILE	132
PFS: FIRST CHOICE	109
CLICK-ART PERSONAL PUBLISHER	105
PFS:PROFESSIONAL PLAN	137
• springboard	
THE NEWSROOM PRO	79
• sublogic	
JET	32
• symantic	
Q&A	227
• tele-ware west	
ABOVE DISK	45
• turner hall	
SQZ	59
• three/d/graphics	
PERSPECTIVE	145
• unison world	
PRINTMASTER PLUS	32.50
NEWSMASTER	59
• wordtech systems	
QUICKSILVER	289
DBXL	89
• word perfect corp.	
WORD PERFECT V.4.2	195
WORD PERFECT LIBRARY	59
MATH PLAN	169
• xerox	
VENTURA PUBLISHER	479

HARDWARE

• amdek	
AMDEK 310A MONITOR	137
AMDEK 410A AMBER	155
AMDEK 410A GREEN	149
AMDEK 410A BLACK & WHITE	155
• ast research	
SIX PAC PLUS W/64K	145
SIX PAC PLUS W/384K	227
SIX PAC PREMIUM W/256K	215
RAMPAGE AT W/512K	379
RAMPAGE XT W/256K	242
ADVANTAGE AT W/128K	319
• canon	
CANON LASER PRINTER	CALL
• citizen	
CITIZEN MSP10	282
CITIZEN MSP15	373
CITIZEN PREMIERE 35	445
CITIZEN TRIBUNE 224 (24 PIN)	629
• hayes	
HAYES 1200 BAUD EXT	365
• hercules	
GRAPHICS CARD +	179
COLOR CARD	155
• intel corporation	
MATH COPROCESSOR-PCXT-5MZ	117
MATH COPROCESSOR-PCXT-8MZ	169
MATH COPROCESSOR-PCXT-10M	217
• magnavox	
AMBER MONITOR	107
GREEN MONITOR	99
RGB COLOR	272
RGB COLOR PROFESSIONAL	294
EGA MULTIMODE	519
• microspeed	
FAST 88 W/NEC V20 CHIP	96
• nec	
NEC MULTISYNC	539
• orchid	
TINYTURBO W/80286 (1/2 CARD)	399
PC TURBO 286E W/1MB	679
TURBO EGA PC/XT W/80286	537
• paradise	
EGA AUTOSWITCH	339
• panasonic	
ALL PRINTERS	CALL
GOOD PRICES!!!	CALL
• quadram	
QUADRAM EGA CARD	CALL
• seagate	
20 MEG-AT H/H	289
20 MEG-XT W/CONTL. CARD	367
30 MEG-AT F/H	549
30 MEG XT W/CONTL. CARD	429
• stb	
STB EGA +	249
STB CHAUFFEUR (HT)	185
• sigma	
SIGMA EGA	299
• tecmar	
TECMAR EGA MASTER	262
• toshiba	
TOSHIBA P321 P/S	440
TOSHIBA P341 P/S E	642
TOSHIBA P351 P/S	939
• video 7	
VEGA DELUXE EGA	329
• zuckerboards	
ALL BOARDS	CALL

MISCELLANEOUS

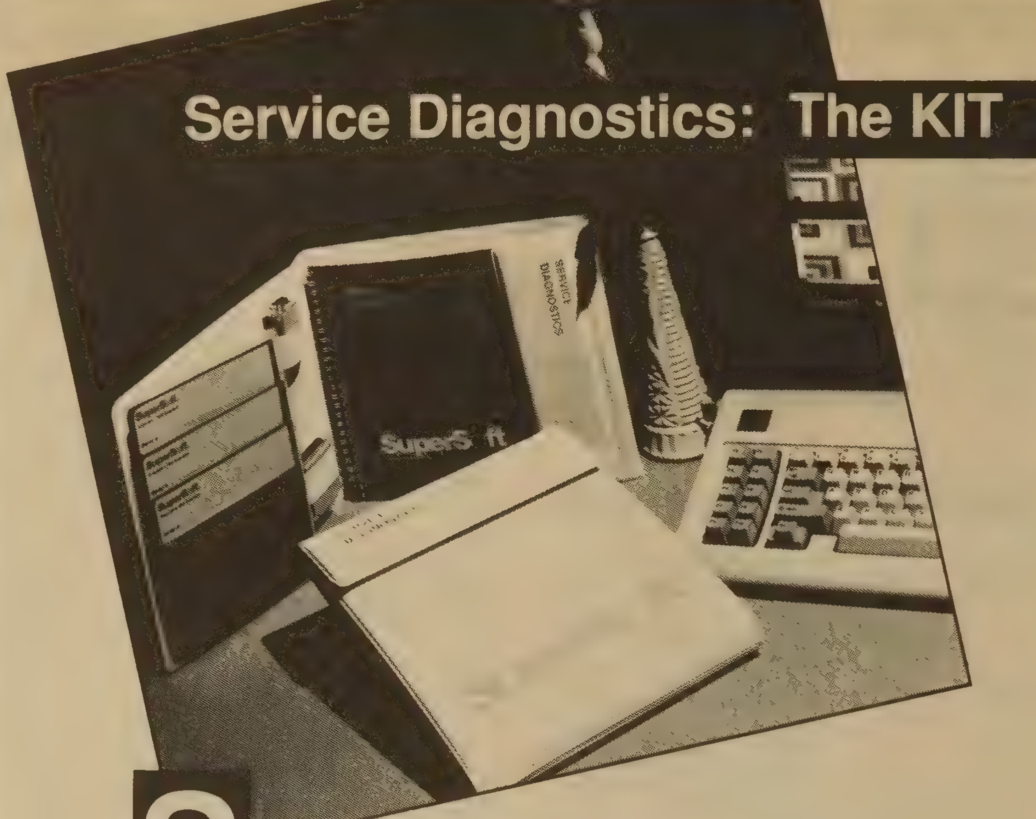
• amaray	
DISKETTE HOLDER (disks/50)	12.50
• maxell corporation	
5¼ DS 10 PAC FLOPPY DISKS	13
5¼ SS 10 PAC FLOPPY DISKS	14
5¼ DS/HD-AT 10 PAC DISKS	27
• generic diskettes	
LOW PRICING	CALL
• sony	
3.5 DS 10 PAC FLOPPY DISKS	20
3.5 SS 10 PAC FLOPPY DISKS	15
• printer cables	
IBM PARALLEL CABLE 6′	10
IBM PARALLEL CABLE 12′	15
• sgl waber electric	
LG20-LINEGUARD SURGE PROTECTORS	24.50
DOS OPERATING SYSTEMS	CALL

DISCOUNT MICRO WORLD™

68 PAUL DRIVE SUITE C SAN RAFAEL CALIFORNIA 94903 ▪ 415 492 8890

CALL NOW • TOLL FREE
1-800-225-3034 CA.

Terms: Prices include 3% cash discount. Add 3% for charge card orders. Shipping on most software is $5.00. CA. order add 6% sales tax. Price and availability are subject to change without notice.



Service Diagnostics: The KIT

SuperSoft announces **Service Diagnostics: The KIT.** All the software, alignment diskettes, parallel/serial wrap-around plugs and extensive, professional documentation to provide the most comprehensive testing available for IBM PCs, XTs, ATs and *all compatibles under DOS or Stand Alone.* No other diagnostics offers such in-depth testing on as many different types of equipment by isolating problems to the board and chip level.

For over eight years, major manufacturers have been relying on SuperSoft's diagnostics software to help them and their customers repair microcomputers. End users have been relying on SuperSoft's Diagnostics II for the most thorough hardware error isolation available. Now versions of Service Diagnostics are available to save everyone (including every serious repair technician) time, money, and headaches in fixing their computers, even non-IBM equipment.

All CPUs & Numeric Co-processors
System Expansion & Extended Memory
Parallel & Serial Ports
Mono, CGA, Hercules & EGA Adapters
All Keyboards & the 8042 Controller
All Color Graphics & Monochrome Monitors
Floppy, Fixed & Non-standard Disk Drives
Standard & Non-standard Printers
System Board: DMA, Timers, Interrupt,
Real-time Clock & CMOS config. RAM

Join the ranks of XEROX, NCR, CDC, SONY and PRIME who have bundled SuperSoft diagnostics with their microcomputers at no risk because of our 30 day money back guarantee.

Service Diagnostics for PC, PC/XT, and compatibles only	$195
Alignment Diskette for PC, PC/XT and compatibles (48 tpi drives)	$40
Wrap-around Plug for PC, PC/XT and compatibles (parallel and serial)	$30
Service Diagnostics for AT and compatibles only	$195
Alignment Diskette for AT and compatibles (96 tpi drives)	$50
Wrap-around Plug for AT (serial)	$15
Service Diagnostics: The KIT (includes all of the above—save $30)	**$495**
Service Diagnostics for all other CPUs (386, V20, V30, Harris, etc.)	$195
Diagnostics II is the solution to the service problems of users of *all* CP/M-80, CP/M-86 and MS-DOS computers	$125
Alignment Diskette for PS/2 and compatibles (3.5 inch)	$40

To order, call 800-762-6629 (in Illinois 217-359-2112), fax 217-398-5923, or write SuperSoft. (Please specify DOS or Stand Alone.)

SuperSoft®

FIRST IN SOFTWARE TECHNOLOGY P.O.Box 1628 Champaign, IL 61820 (217) 359-2112 Telex 270365

SUPERSOFT is a registered trademark of SuperSoft, Inc.: CDC of Control Data Corp.: Dysan of Dysan Corp.: IBM PC, AT & XT of International Business Machines Corp., MS-DOS of MicroSoft Corp., NEC of NEC Information Systems, Inc. PRIME of PRIME INC: Sony of Sony Corp., and Xerox of Xerox Corp CPM-80 & CP/M-86 are the trademarks of Digital Research, Inc

disk for multiple reviewers (Brøderbund even provides extra disk labels).

The $995 Network version of *For Comment* supports the IBM PC or Token Ring networks, Novell NetWare, or the 3Com EtherSeries. Ethically speaking, one copy of the program must be purchased for each person who will be acting as an Author, but anyone on the network can be a reviewer. In practice, the Authoring part of the program should either be kept off the network entirely, or secured in a private "volume" or directory.

A comment or suggested revision can be up to 64 text lines in length. Reviewers can carry on extended dialogs by commenting on comments. The F1 key calls up a rich array of context-sensitive Help screens.

Although *For Comment* is a complex program, the designers have taken pains to make it easy to learn and use. Along with a fat, spiral-bound User Guide, the package contains a Quick Start leaflet for authors, multiple copies of a Quick Start leaflet for reviewers, and a comprehensive Demo/Tutorial disk. The Tutorial can be completed in about two hours, and uses a humorous example — Abe Lincoln's draft of the Gettysburg Address, circulated to his wife, the Vice President and General Grant.

"Importing" and "exporting" files are two pivotal functions of the program. After booting the Author disk, you designate the file to be imported, and fill out a "cover sheet" listing the reviewers. The program makes its own copy of the document, leaving the original unchanged. Files may be imported in plain ASCII format, or as *WordStar*, *MultiMate* or *WordPerfect* documents with all their formatting intact. After the author has digested all the proposed revisions and comments, he can "export" the file, reading it back into the original word processor format. Any proposed revision may be discarded, or "swapped in" to replace the original text. Reviewers cannot "export" or create a new document, but they have most of the other options and utilities available to authors.

The author can collate multiple sets of comments into a single file, and print out a document in several ways: text with comments printed as footnotes or end notes, text with no comments, comments and revisions only, or the contents of the reviewers' Notepads. The Notepads can hold about two pages of text that is not tied to a particular line of the original document.

The program has excellent error-trapping. I was easily able to recover from every dumb thing I tried, without damage to either my text or my stomach lining. Error Messages are displayed in bold red dialog boxes, and fully explained in an Appendix to the User Guide.

It is difficult to criticize a program that is crafted so carefully and that works so smoothly. Microsoft Word users might be disappointed to find that there is no mouse support in *For Comment*, and that their files must first be converted into ASCII format (with loss of some attributes).

Computer novices may have some difficulty setting up *For Comment* because it requires a CONFIG.SYS file in the root directory with the FILES attribute set to a value of at least 20. I overlooked this instruction when I first tried to use the program, and found that it ran with maddening slowness, stopping to save everything to disk every few keystrokes. When I followed the instructions, the program performed admirably (on a two-floppy AT&T 6300 with nothing special).

I liked this program so well that I brought the first draft of this review (a *MultiMate* document) into *For Comment*, declared myself Reviewer as well as Author, and used it to finish the article. Any errors or omissions are purely the responsibilty of the Reviewer. (Brøderbund Software, Inc., 17 Paul Dr., San Rafael, CA 94903-2101.)

CREATIVE IDEAS™

COMPUTER FURNITURE

50″L or 72″L

- Desk at Keyboard Height
- Letter/Legal Locking File Drawer
- Accessory Drawer
- Adjustable Monitor Shelf [ALSO 60″L]
- Corner Unit Right or Left Side
- Printer Stand w/ Drawer and Refold Tray
- Limited Stock Immediately Available

OPEN M-S 9-5:30 WED. TILL 8

ALPHA
FINE COMPUTER FURNITURE

930-0277
2241 N. MAIN-WALNUT CREEK

SUBSCRIBE

Keep up with California computer news. If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.

California has needed a magazine for computer users and MicroTimes is it!

Company Name ______________________
Name ______________________
Address ______________________
City ____________ State ________ Zip ________

☐ Northern Edition ☐ Southern Edition

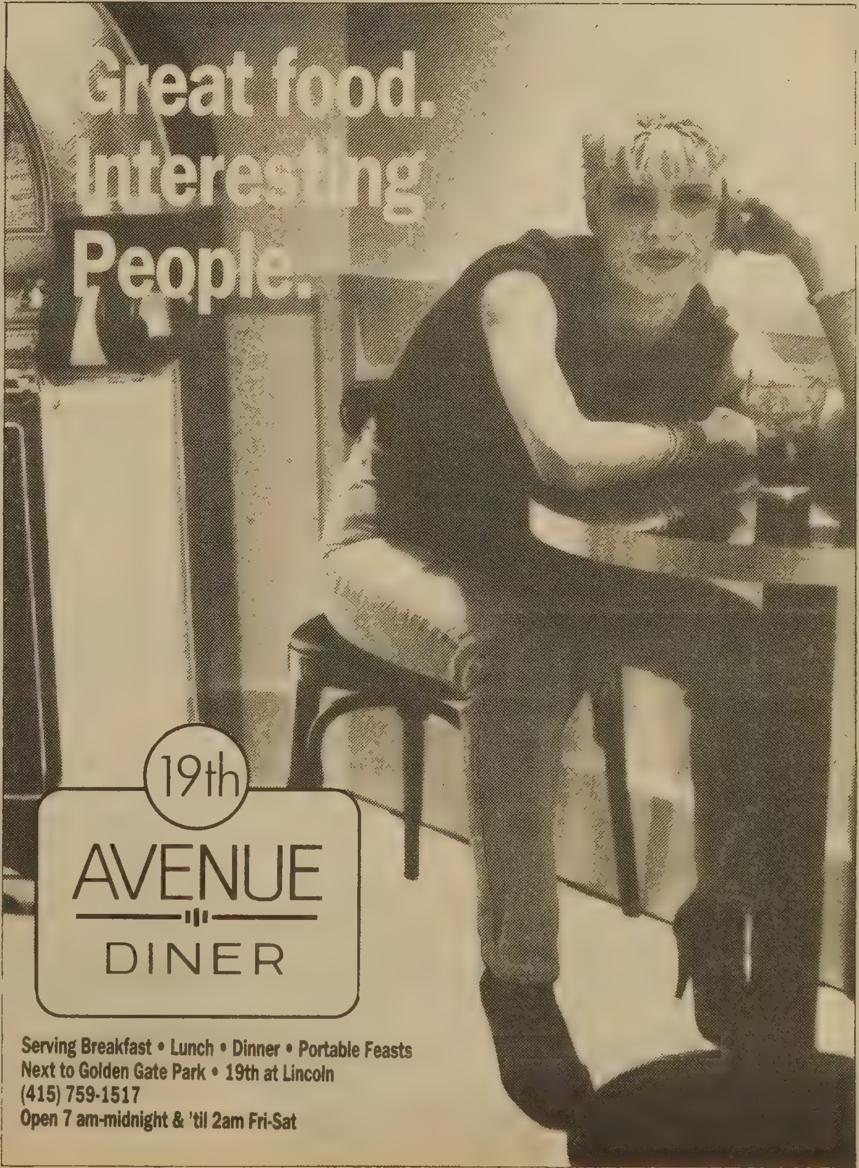
Inside U.S.
☐ 1st Class $40/12 issues
☐ 3rd Class $12/12 issues

Call or write for Mexico, Canada and Overseas rates.

☐ I have enclosed a check for $ ________
☐ Please charge $ ________ to Visa/MC
______________________ Exp. ________
Card Name ______________________
Address ______________________
City ____________ State ________ Zip ________
Signature ______________________

Mail to: MicroTimes Subscriptions
5951 Canning Street
Oakland, CA 94609
(415) 652-3810

MicroTimes Subscriptions
1800 N. Highland, #220
Hollywood, CA 90028
(213) 467-7878



Serving Breakfast • Lunch • Dinner • Portable Feasts
Next to Golden Gate Park • 19th at Lincoln
(415) 759-1517
Open 7 am-midnight & 'til 2am Fri-Sat

USER GROUP NETWORK

By Mary Eisenhart

We got this scary-looking envelope from the **City of Berkeley Police Department** last month. Racking my brain for some forgotten parking ticket come back to haunt me, I was much relieved to discover a cheerful letter from **Police Chief Ronald D. Nelson**, informing all of us that the Berkeley PD has set up a public relations/community BBS known as **The Guardian.** Operating 24 hours a day, seven days a week, at both 300 and 1200 baud, The Guardian can be accessed at (415) 644-6806.

Says Chief Nelson: "The board was created to increase communication between the community and the Berkeley Police Department. It will list Crime Prevention information, including Neighborhood and Business Watches, crime statistics and recent press releases. Community organizations are encouraged to call and post events. Everybody is invited; you need not be a Berkeley citizen." The sysop of the board is **Officer Carl Orsi,** a familiar figure in our BBS listings for some time. So check it out—and maybe encourage your local PD to do likewise.

It was great to meet some new friends and see some old ones at the **Computer Faire** in March. User groups played a significant role at this gathering, often providing a forum for displaying the wares of absent hardware and software companies.

It was also great to attend some of the various conferences at the Faire, which covered a variety of topics from The Future Of Computing (anybody's guess...) to Computers And Music to Desktop Publishing Etc.

One of the more interesting sessions was a meeting of the **Homebrew Computer Club,** which, as some of you may recall, ceased regular meetings a few months ago. However, some things are too good to die, and the Faire provided an opportunity for Yet Another Gathering, in the course of which it emerged that **Lee Felsenstein** has Another Idea.

This time, it's not a computer. It's a different kind of user group, which Felsenstein dubs "**Ronin,**" after masterless samurai in medieval Japan. Knights-errant of the computer world, ronin constitute a sort of "horizontal user group," dedicated to furthering the constructive use of computers in society; as he says in "The Ronin Manifesto," passed out at the meeting and posted in the Hackers/Homebrew conference on **The WELL,** "personal computers can be used as communications tools to allow individuals more easily to form free associations to pursue mutually agreed-upon aims."

Practical applications of the ronin principle are likely to include the salvaging and restoration of obsolete computers, especially for the use of service and nonprofit organizations that probably need computers and can't afford them, the evolution of hardware and software standards for these systems, advice to manufacturers on the development of new equipment, and building a communication network. "We will, in effect, constitute a horizontal user's group, spanning many lines of hardware and software, and dealing with the requirements of the use of the technology. We will complement and share membership with the vertical user's groups, and our efforts will reinforce each other," says Lee.

The ronin concept is still in the early planning stages. Interested parties who'd like to make suggestions and otherwise take part in this evolving project are invited to send their names and addresses to Golemics, Inc., Department R, 2600 10th St., Berkeley, CA 94710.

Speaking of The WELL, as we were a minute ago, there's good news for those who have been puzzled by its multiplicity of commands and functions, and have somehow managed not to download the online manual. There's now a hard-copy version of this manual, which current and prospective users may obtain by sending $3 to The WELL at 27 Gate Five Road, Sausalito, CA 94965. State that you'd like the manual, and don't forget to include your Snail Mail name and address. Or call (415) 332-4335 if you'd like more information.

There are those who claim that **CP/M** is dead, and there are those who cling to their old Osbornes/Kaypros/Morrows/etc. for dear life, resisting the blandishments of IBM clones and the onslaught of Atari STs. If all goes according to plan, the august **Bob Athey** and I will be speaking at the **East Bay FOG** meeting on May 13, and we look forward to meeting some of you. One of the things we're likely to talk about is the future of CP/M—as even FOG itself becomes more involved in MS-DOS technology, who are those CP/M users anyway, and what are they using their machines for, and what should *MicroTimes* be doing, if anything, to support them? This is something we're thinking about quite a bit lately, and we heartily encourage your comments, either at the FOG meeting itself or by mail (e- to **microx** on The WELL, 415/332-6106, US to 5951 Canning Street, Oakland 94609).

Meanwhile, to give the clone community equal time—**Aubrey Pilgrim**, who periodically graces our pages with advice on economical clone-building, has written a book on the subject, **Build Your Own IBM Compatible And Save A Bundle.** Those of you who've read Aubrey's articles in the past know that they're full of practical advice, taking even the non-techie through the building process in easy stages. It covers PC, XT, and AT clone models and offers useful hints on customizing systems for your own needs. So if the main thing that's been keeping you from the clone of your dreams is a certain lack of independent wealth, wait no longer, buy this book. It's available in hardback ($22.95) or paperback ($14.95) from TAB Books Inc., P.O. Box 40, Blue Ridge Summit, PA 17214. You can call TAB at (717) 794-2191 for more information.

Also on the PC front, **Loyd A. Cribbs** of the **San Francisco Personal Computer Users Group** writes in with the latest info on this well-established organization, founded in 1982 and now serving users of all machines running MS- or PC-DOS. The group now has a 24-hour hotline recorded message at (415) 221-9166, and meets on the third Monday of the month at Fort Mason Center in San Francisco—SIG meetings and software sales commence at 7 pm, the general meeting at 8. Meetings generally include product demonstrations, presentations by guest speakers, special instruction for beginners, and networking opportunities. Special Interest Groups so far include those dedicated to *Paradox, Framework, Lotus 1-2-3* and *Symphony,* desktop publishing, Microsoft *Word*, Turbo Pascal, C language, *dBASE*, Modula-2, Compaq—and one for Teachers With PCs.

SFPCUG's May meeting will feature the irrepressible **John Dvorak,** sardonic columnist extraordinaire, so don't miss it. And if, in the meantime, you'd like more information than the hotline provides, give Loyd a call at (415) 751-5219.

Southern California Amiga-ites take note: **Geri Lynn Peak** of the **Los Angeles Amiga Users Group** would like you to know about the upcoming **Amiga Show,** sponsored by SCAN, the Southern California Amiga Network, comprised of several Amiga user groups. Geri promises that the new Amiga 500 and 2000 will be prominently featured, and there'll be presentations of third party products, door prizes and other goodies. The show takes place at the Shrine Exhibit Hall in Los Angeles, in conjunction with the **Computer Sellathon,** on May 16 and 17. For exhibitor information, raffle tickets, etc., contact SCAN, P.O. Box 947, Culver City, CA 90232, or call (213) 387-3698.

Also in SoCal, **Fred Blechman** reports that the **Sanyo Users Group** of Los Angeles has changed its meeting location. Meetings are still on second Wednesdays at 7 pm, but they're now held at Cal State University, Los Angeles, in the South Pasadena room on the fourth floor of the Student Union, Building 5. If you'd like more information, call Fred at (818) 346-7024.

And, lest you should forget the **Timex-Sinclair,** faithful correspondent **John Petersen** of Manhattan Beach reports on the latest doings at the **South Bay Computer Club.** Seems that modems are a hot topic these days, and **Ed Grey** has been showing off his Specterm II 64-column 300/1200 baud modem program to interested folks. Also, **Dave Clifford** is running the club's BBS at (213) 329-3922, where he gets calls from all over the country seeking his expert advice on hardware building and related matters.

The **Ambitious Achievement Of The Month Award** goes to **Richard Yim,** who writes in periodically about the various doings of the **Family Radio Forum Christian BBS.** Callers to the BBS at (415) 562-5483 can now download the entire King James Bible *and* accompanying Bible search programs. So don't rip off the Gideons—download your own Bible from Richard's BBS instead. If you have a 2400 baud modem, so much the better ...

That's it for now. Keep that news coming, and we'll see you next month. And don't forget that if you'd like issues of *MicroTimes* delivered to your group, this can probably be arranged. Send us the relevant coupon in this issue, or call our distribution department at (415) 652-3810 to discuss details. ☐

BULLETIN BOARDS

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss..

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

213

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

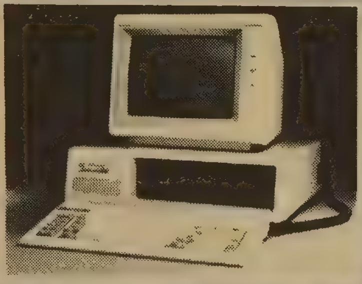
The Wargames RBBS. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the lat-

AMERICAN DIGITAL DISCOUNT ASSOCIATION

SUPER iXT SYSTEM

with Floppy Drive
Floppy Drive Controller
Monochrome Monitor
Video Card
20 Mb Hard Disk

Model I/5MHz	**$945.00**
Model II/8MHz	**995.00**
Model III/10MHz	**1045.00**



IBM XT SYSTEM

IBM XT SYSTEM

with 1 Floppy Drive
Multi-I/O Card
Monochrome Monitor
Video Card

IBM XT System $1595.00

SUPER iAT/8MHz SYS

Super iAT/8MHz System
with 640K Memory
1.2 Mb Floppy Drive
30 Mb Hard Disk
Monochrome Monitor
Video Card

Super iAT System $1595
please call for super iAT 12MHz

IBM AT SYSTEM

IBM AT/6 or 8MHz System
with 512K Memory
1.2 Mb Floppy Drive
30 Mb Hard Disk
Monochrome Monitor
Video Card

IBM AT 6MHz	**$2995.00**
IBM AT 8Mhz	**$4495.00**

TOSHIBA LAPTOP-3100

AT Power in a Compact Size
GaS Plasma Screen
8MHz Speed
640K Memory
One 3.5'' 720K Floppy Drive
Parallel/Serial Port
10 Mb Hard Drive

3100 Laptop $3495.00

TOSHIBA LAPTOP-1100

CMOS 80C86 - 7.1 MHz
LCD Display - 640K Memory
Two 3.5'' 720K Disk Drives
One Expansion Slot
Color Graphics Card
Par./Ser. Port - Clk Calendar
Ext Floppy Drive Optional

1100 Plus Laptop $1795.00

NEC LAPTOP

NEC Laptop Multispeed™
9.54/4.77 Mhz Speed
640K Memory
Two 3.5'' 720K Disk Drives
Super Twist LCD Display
5 Built-in Software Programs

NEC Laptop $1495.00

TAXAN 635/650 Monitor

w/.28mm(650) or .37(635) Dot Pitch
Ultra Hi-Res(720x400) Txt Clr Switch
Grn/Amb/Wht Reverse/Gray Reverse.
Taxan 635.....$450 650.....$495

TAXAN 555 CARD	**$155.00**
TAXAN GOLD CARD Works w/TGA & EGA Monitors	**$395.00**
TAXAN COLOR 400 CARD	**$375.00**

TAPE BACKUP SYSTEM

IRWIN 10Mb Backup System
For PX/XT & Compaq
$295.00

ACHIEVE 60Mb Tape Backup
Self Contn'd & Menu Driven
Image & File by File Backup
PC/XT, AT & Compatibles
Quick Data Format **$699.00**

PRINTERS

200cps in Dot Matrix. 50cps in Near Letter Quality. Epsen 286 Compatible Tractor & Friction Feed.

FORTIS DM2015 132 Col.	**$395.00**
FORTIS DM2010 80 Col.	**$345.00**
DM1310 130cps, 80 Col.	**$249.00**

EPSON PRINTER 300cps, NLQ Mode

EX-800 80 Col. (OEM)	**$449.00**
EX-1000 132 Col. (OEM)	**$549.00**

TAXAN 710S PLOTTER

Max Pen Speed 10 In/sec in Axial Direction - 6 Automatic Pen Changes
6 Color Fiber Pens Provided (uses most types of ceramic pens)
100% HP-GL Command Compatible
100% Pin compatible Ser. Port w/HP-7475
Takes Up To 11'x 17'' Paper

710S Plotter $795.00

EGA MONITOR

Taxan 660 Monitor
12" screen, 650 x 350. . . .**$415**

TATUNG 1380 Monitor
13'' Screen, 650x350 **$395.00**

MULTISYNC™ MONITOR

TAXAN 770 Multivision
14'' Screen, 800x600 **$595.00**

NEC Multisync
14'' Screen, 800x560 **$625.00**

EGA CARD

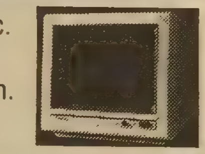
SUPER EGA Card $185.00

ATI Wonder EGA Card
Auto-switch Capability,
132 Col. Emulation **$245.00**

TAXAN 560 EGA Card
Auto-switch
Capability **$295.00**

RGB MONITOR

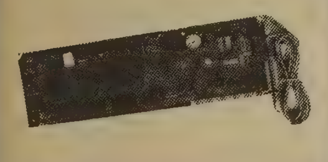
CGA Spec.
640x200
Resolution.



TAXAN 720	**$350.00**
TATUNG 1360	**$325.00**
ADDA RGB	**$295.00**

MODEMS

Fully Hayes Compatible



1200 Baud Internal	**$ 99.00**
2400 Baud Internal	**$225.00**

HARD DRIVE for PC/XT

10 Mb w/Controller	**$295.00**
20 Mb w/Controller	**$365.00**
30 Mb w/Controller	**$449.00**
60 Mb w/Controller	**$795.00**
100 Mb w/Controller	**$1495.00**

HARD DRIVE for PC/AT

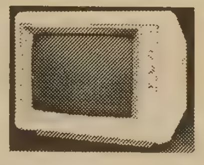
30 Mb By Rodime	**$495.00**
30 Mb By Seagate	**$595.00**
40 Mb By Rodime	**$595.00**
40 Mb Micropolis, 25mS	**$695.00**
60 Mb Micropolis, 25mS	**$995.00**
70 Mb Micropolis, 25mS	**$1095.00**
80 Mb By Seagate	**$1195.00**
120 Mb By Maxtor, 25mS	**$2995.00**

TTL MONO MONITOR

TTL Monochrome Monitor

Taxan 123 Green	**$109.00**
Taxan 124 Amber	**$119.00**
Tatung Green	**$ 99.00**
Tatung Amber	**$109.00**
ADDA Amber	**$ 89.00**

COMPOSITE MONO MON



Taxan 118 Green	**$ 99.00**
Taxan 119 Amber	**$109.00**

EMS CARD

0K Expandable to 2 Mb
Supports EMS Standard
Works with Lotus Release 2 Etc.

For XT	**$149.00**
For AT	**$169.00**
D-RAM 41256	**$3.25 ea.**

ADD-ON CARDS

Mono Graphic/Printer Port	**$79.00**
Color Graphic Card	**$69.00**
XT Multifunction w/384K Memory	**$159.00**
XT Multi-I/O Card	**$79.00**
XT Mini-I/O Card	**$69.00**
AT Mini-I/O Card	**$79.00**

LASER PRINTER

LASER PRINTER
By GENICOM

10 Pages Per Minute
with GE Carry-in Service

$2995.00

PC XT/AT KEYBOARD

KEYBOARDS
for
IBM PC/XT, AT

AT Style	**$65.00**
Enhanced AT Keyboard	**$79.00**

FLOPPY DISK DRIVES

XT-360K	**$ 89.00**
AT-1.2 Mb	**$129.00**
AT/XT-3½''	**$ Call**
Apple IIC & IIE	**$125.00**
MacIntosh **MAC-800K**	**$215.00**

POWER SUPPLY

Uninterruptable Pwr Supply
Powr Failure Interrupt Signal to Computer
Back-up Power for 15 Min.
Noise Surpression & Surge Protection

250 Watt	**$199.00**
400 Watt	**$395.00**

POWER SUPPLY

150 Watt Power Supply
For PC/XT **$49.00**

200 Watt Power Supply
For PC/Baby AT **$69.00**

200 Watt Power Supply
For PC/AT **$79.00**

SYSTEM SOFTWARE

MS DOS 3.2
w/GW BASIC
$79.00

FAX MACHINE

SHARP
Model FD-200
Support Group II & Group III

$1495.00

ACCESSORIES

8087 Chip	**$ Call**
80287 Chip	**$ Call**
Printer Cable	**$12.00**
2-Way Data-Switch Box	**$29.00**
3-Way Data-Switch Box	**$39.00**
Power Directory with **Modem Protection**	**$49.00**
DS/DD 360K Diskettes **(100 per box)**	**$9.00**

Prompt delivery, usually shipment within 48 hours (except personal check orders). We welcome major educational institutions and government agencies to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6½% sales tax.
Mastercard or Visa add 3%

Business hours: Mon.-Sat. 8:30am - 5:30pm

IBM PC is a registered trade mark of IBM Corp.
TAXAN is a registered trade mark of TAXAN Corp.
©1987, American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.

In Torrance
4040 Spencer St., #M
Torrance, CA 90503
(213) 542-3578

In Alhambra
2048 West Pepper St.
Alhambra, CA 91801
(818) 282-3121

Jet-Comp Enterprises

For PC/XT

640K Turbo Motherboard [OK]	**$89**
Multi I/O with Floppy Controller	**70**
Monochrome Graphic/Printer	**59**
Color Graphic Card	**50**
640K RAM Card OK	**35**
2 MEGA Byte Memory Expansion OK	**115**
RS232 Serial Card [2 ports]	**27**
[4 ports]	**95**
Floppy Disk Controller	**30**
Game I/O card	**15**
384K Multifunciton [OK]	**70**
XT Computer Case	**28**
150W/180W Power Supply	**55/65**
Keyboard for XT	**55**
Eprom Burner	**130**
EGA Card	**175**

FOR PC/AT

AT Mother Board 6/8MHz	**$350**
AT Mother Board 6/10 MHz	**380**
Baby AT Mother Board 6/10MHz (0 Wait State)	**370**
3M Multifunction Card [OK]	**145**
2MB Memory Expansion [OK]	**125**
AT Multi I/O Card	**65**
AT case	**60**
AT 200 W power supply	**89**
Key Board for AT	**59**
WD Hard Disk/Floppy Controller	**175**

★ **DEALER QUANTITY DISCOUNT** ★

Disk Drive/Controller

Hard Drive

[1] 20MB Seagate St 225	**$255**
[2] 30MB Seagate St 4038	**520**
[3] 20MB Microscience HH725	**250**
[4] WD Hard Disk Controller	**89**
[5] DTC Hard Disk Controller	**75**

Floppy Disk Drive

[1] 1.2 MB Teac FD 55GFV	**125**
[2] 360 KB Teac FD 55Bv	**89**
[3] 360 KB Fujitsu M2251A	**75**

Miscellaneous

Kingtech Portable Computer Kits XT/AT (Case Keyboard, Power Supply, Monitor)	**370/400**
Logimouse c7	**$72**
Multicenter	**45**
AC Power Center	**25**
AC Power strips	**10**
Diskette File Box	**9**
Printer cable	**8**
Modem 300/1200	**95**

MONITORS

Quimax TTL	**125**
LTI TTL	**79**
Casper TTL	**85**
Panasonic TTL	**95**
Color Monitor	**CALL**
EGA Color Monitor	**CALL**

4588 Peralta Blvd., Suite 15
Fremont, CA 94536 • **415-794-9864** • **415-794-9867**

est PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

Tele-Web. (213) 372-4050. 300/1200, 7-1-N, 24 hours, multi-user. MicroTimes Electronic: Southern California edition of *MicroTimes*. Articles, events calendar, BBS and user Group listings for Southern California, classifieds. Type GO MICRO. Home Loan BBS: Up-to-date home mortgage rates supplied to you by Pacific Mortgage Group, a company that prides itself in getting you low mortgage rates. Rates are updated weekly. Type GO LOAN. Dining-Line: South Bay database of online restaurant menus. Menus may be searched by type of cuisine, price of a meal, name of restaurant, etc. Database includes complete menus and a community forum. Type GO FOOD. LA Weekly Electronic: electronic version of LA's largest weekly entertainment newspaper. Includes feature articles, calendar and events listings, classifieds and more. A new edition each week. Type GO WEEKLY. Easy Reader Electronic: electronic edition of the Easy Reader newspaper. Includes feature articles, weekly calendar, night club listings and classifieds in over 80 categories. Type GO EASY. FREE.

T.U.S.D. (213) 533-4545, 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free, 300/1200 baud. Sysop: Wayne Hoover.

Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production /post production services (world-wide), Los Angeles restaurant guide, remote access computers (world-wide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213)615-0528, 8-N-1, 24 hours, 7 days, 300/1200 baud. Bloom County is an IBM BBS running Nochange software. This system features online games, file uploading/downloading and the best e-mail system around! Call and join our Quarton-The Later Years D&D message base. Sysop: Brody Schiess.

Find-A-Home. BBS emphasis on locating roommates, tenants, rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, dealing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud. Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

99 BBS. (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. For TI-99/4A com-

AT MICRO MARKETING

HAVE IT YOUR WAY & SAVE $$$

Buy Different Parts And Assemble Your Own System Or Let Us Help You.

MOTHER BOARDS

XT Regular Mother Board	78.00
XT Turbo Mother Board	90.00
AT Mother Board (6 to 10 MHz)	389.00

POWER SUPPLIES

150W for XT	51.00
200W for AT	70.00
180W for XT	59.00

DRIVES

Fujitsu 360K	77.00
Fujitsu 1.2 MB	114.00
TEAC 360K	90.00
TEAC 1.2 MB	119.00
20 MB (Seagate ST 225)	259.00
30 MB (Seagate ST 238)	289.00

EXPANSION BOARDS

Monochrome Graphics Card	60.00
Color Graphics Card	60.00
Paradise EGA	185.00
Multi I/O Card	64.00
XT Floppy Controller Card	22.00
Hard Disk Cont. + Cable	82.00
Hard and Floppy Cont. for AT	174.00
Serial/Parallel Card for AT	54.00

CASES

XT Slide Case	29.00
AT Slide Case	59.00

KEYBOARDS

XT/AT Switchable Keyboard	51.00
Enhanced Keyboard	70.00

MONITORS

Samsung Monochrome Graphics (Reg.)	75.00
Casper Monochrome Graphics	80.00
Casper Color Graphics (3 in 1)	299.00
EGA Monitors	CALL

PRINTERS

Fujitsu DX-2100	399.00
Fujitsu DX-2200	499.00
EPSON	CALL
OKIDATA	CALL
HP Laser Printers	CALL
CHIPS	**CALL**
MS-DOS 3.2 with GW-BASIC	**72.00**

INSTALLATIONS

FCC CLASS B APPROVED SYSTEMS

XT Installation	30.00
AT Installation	60.00

CALL FOR PRODUCTS NOT LISTED.

WARRANTY:
ONE YEAR PARTS, 90 DAYS LABOR.

- THE ABOVE PRICES ARE CASH ONLY.
- PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

MICRO MARKETING

3249 Stevens Creek Blvd., #203
San Jose, CA 95117

(408) 296-0653

FREE USER GROUP/BBS LISTING

MicroTimes is a free computer magazine with a current monthly circulation of 140,000 copies per month in Northern and Southern California. We offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include additional information for our monthly user group column. Please send us your listing by the first of the month preceding the month in which you want your first listing to run.

We will run your listing as space permits until you tell us to stop, or until it's obviously obsolete. Please keep us posted on changes as they occur.

☐ USER GROUP

Group name ____________________

Meeting address ____________________

Meeting time and day ____________________

Contact name ____________________

Address ____________________

Phone number ____________________

☐ BBS

Name ____________________

Number ____________________

Parameters, operation hours, baud rate ____________________

____

Sysop ____________________

USE SEPARATE SHEET FOR DESCRIPTION

Mail to: **MicroTimes User Group Listings**
5951 Canning St., Oakland, CA 94609

GUITAR SHOWCASE

GUITAR SHOWCASE guarantees the lowest price, always! Bring any advertised price from any local authorized dealer, and we will gladly beat that price within 30 days of the appearance of that advertisement.

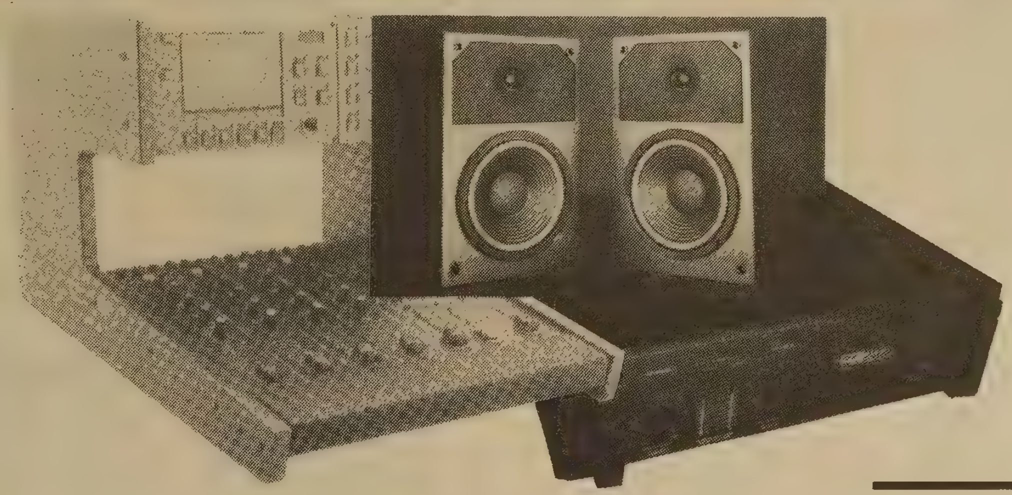
RENT TO OWN

DAILY RENTALS

FINANCING AVAILABLE
ALL MAJOR CREDIT CARDS ACCEPTED

SAN JOSE
3090 S. Bascom Ave.
San Jose, CA 95124
(408) 377-5864

CAPITOLA
1360 41st Ave.
Capitola, CA 95010
(408) 476-4882



The AMR Recording Package
- Model 42 Mixer
- Recorder MRC-4
- EBK-1 Kit
- PMA 200 Power Amp
- A pair of 208 Studio Monitors

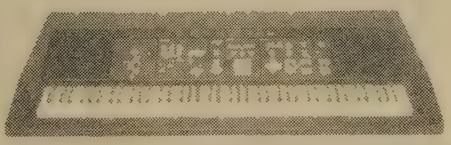
Set up your home Recording Studio with a pair of Studio Monitors, Power Amp, Recording Deck, Mixer and more.

$1588
AMR—Today and Tomorrow

Guitar Showcase The Bay Area leader in musical software and hardware and home recording gear.

The **Computer** is going, the **keyboard** is fired up, the **Porta Studio** is on...but the sound's not there. **Missing that one special effect?**

Rent it **from Guitar Showcase.**
Guitar Showcase has a **complete short term rental** and **Rent-to-Own program.**
Guitar Showcase THE Music Store
The Bay Area's largest is *Sales* • *Service* • *Rentals* • *Lessons*



In Stock Now!
Kurzweil RMX 250
Rack mount 250

Base unit list **$8500**

This month the **Keyboard Department** is featuring **Software and Hardware** for the **Commodore 64/128.** Come in and check out the **Great Deals** on **Sonus** and **Steinburg!**

JBL Clinic
May 27
6-8 PM
- Sound Reinforcement
- Studio Monitors

At Guitar Showcase in San Jose.

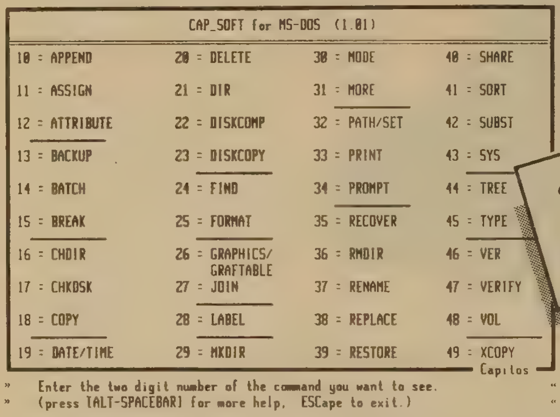
Lexicon Clinic
May 20th
6-8 pm
Come see and hear the one and only **PCM-70** with the all new **version 3.0 software.** This is a ***FREE*** clinic to be held in the ***Keyboard Department at Guitar Showcase*** in San Jose.

MIDI MONDAYS

5/4	**Midi on the Commodore 64/128** Steinberg Card 32 and Sonus Super Sequencer
5/11	**Sampling on the Roland S-50** Looping and visual editing
5/18	**Midi on the Guitar** Roland GM to Controller
5/25	**Midi on the IBM-PC** Texture, Voyetra, Personal Computer

CAP_SOFT™ MAKES MS-DOS® EASY TO USE

Have you ever wished you could take your MS-DOS Manual that has been gathering dust on your bookshelf and put it where you could use it, RIGHT ON SCREEN? **Now you can with CAP_SOFT.**



```
                       CAP_SOFT for MS-DOS  (1.01)
10 = APPEND        20 = DELETE        30 = MODE          40 = SHARE
11 = ASSIGN        21 = DIR           31 = MORE          41 = SORT
12 = ATTRIBUTE     22 = DISKCOMP      32 = PATH/SET      42 = SUBST
13 = BACKUP        23 = DISKCOPY      33 = PRINT         43 = SYS
14 = BATCH         24 = FIND          34 = PROMPT        44 = TREE
15 = BREAK         25 = FORMAT        35 = RECOVER       45 = TYPE
16 = CHDIR         26 = GRAPHICS/     36 = RMDIR         46 = VER
                        GRAFTABLE
17 = CHKDSK        27 = JOIN          37 = RENAME        47 = VERIFY
18 = COPY          28 = LABEL         38 = REPLACE       48 = VOL
19 = DATE/TIME     29 = MKDIR         39 = RESTORE       49 = XCOPY
                                                            Capitos
»   Enter the two digit number of the command you want to see.          «
»   (press [ALT-SPACEBAR] for more help.  ESCape to exit.)              «
```

"CALL FOR FREE BROCHURE"

CAP_SOFT for MS-DOS is an excellent, inexpensive add-on program which provides an on-line version of Microsoft's reference manual for MS-DOS. Descriptions and examples for the 40 different commands found in MS-DOS 3.2 are only a few keystrokes away.

Send only $29.11 today to:
150 Felker Street, Suite E
Santa Cruz, CA 95060
(408) 425-5454

Capitos
SOFTWARE

(Check, MC, or VISA. CA residents add $1.75 tax)
Requires at least 256K, dual-floppy PC with MS-DOS 2.0 or higher

MS-DOS is a registered trademark of Microsoft Corporation

Cypress Distributing Company®

Printer Repair and Parts

Cypress Distributing Company is an Authorized Service and Parts Center for:

Canon Toshiba Panasonic
Fujitsu Sunol Brother C. Itoh
Ziyad Sheet Feeders Sanyo
. . . and others

Cypress Offers:

- ▶ Extended Warranty Contracts
- ▶ Extensive Parts Inventory
- ▶ On-Site Service
- ▶ Depot Service
- ▶ 72 Hour Turn-Around

Call Cypress 408-297-9800 for your Printer Repair and Parts

Cypress Distributing Company
560 Lincoln Avenue
San Jose, CA 95126

® Registered trademark of Cypress Distributing Co.

puters. Operates 24 hours, 7 days. Downloads, uploads, multiple message boases and more. Sysop: Roger Davis.

CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

Intelligent Solutions BBS. (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use PC-Board system. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200/2400 support vice, 8-N-1, 24 hours. Sysop: Thompson McDonald.

The Talk Line. (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213)· 553-1473. Sysop: Robert H. Kohn, Esq.

BBS-64 Shopper. (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

Hollywood Midnight Express BBS. (213) 465-0676. Apple board, all computer users welcome. Sub-board for amateur and professional writers, ul/dl of Apple II graphics created by users. Sysop: Michael Thomas.

K&L Tele-Catalog. (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

Atari Telecom. (213) 494-7083. 24 hours, 300/1200 baud. Supports all Atari computers. 20+ megs online storage. 16+ SIGs for discussion. Online games, role-playing games, ATASCII graphics, large online info libraries, ul/dl. Standard parameters. New users needed! Sysop: Dr. Matrix.

The Crest RBBS. (213) 471-2518. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest e-mail, ul/dl, color/music online. Best of all it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Eric Newhouse.

The Luv Connection. (213) 663-6886. 24-hours, 300/1200 BPS, 8 bits, OPA, 1 stop. Sysop: Todd

LAAUG-LINE. (213) 559-7367. 300/1200, 7 days a week, 24-hours. Sysop: Gary Woolard.

Hollywood Commodore User Group Hug #1. (213) 466-3049. 8-bit, no parity, 1 stop, 24-hours, 300-1200 baud, running on C-NET. Sysops: Joss A. Vazquez & Zed Yago.

Alinco Ind. RBBS. (213) 402-4716. 300/1200/2400 baud, N-8-1. Upload and download of public domain files. E-Mail, conferences: games, communication and technical references, systems and peripherals price list. This is a totally new board. Sysop: Albert Chang.

Long Beach AIDS Information BBS. (213) 663-2025. 24-hours, 300/1200 baud. Information on AIDS issues, for discussion. Sysop: Ken Ragge.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Evergreen PC Users Group (EPUG-1) (408) 270-4085, San Jose. 8-N-1, 1200/450/300 baud, 24 hours. Sysop Bob Allen. 32 megabytes online, 34 directories created by Special Interest Users.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 299-3801 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop Ann Dannelly.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 8/N/1, 300/1200 baud, 24 hours. Something for everyone. NEW: horseracing SIG for the serious track players. Sigs for all computers. E-mail system. Public Domain / Shareware software. Over 40 separate message bases. 15 megs allocated for files. Online 2 years. Sysop: Ronnie L. Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

SDI Clearinghouse BBS. Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

The Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Bay Area Atari Users Group 24 hour BBS, 300/1200, ATASCII or ASCII. Sysop Mark Bloemenkamp. (408) 249-7722.

Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

SOFTREK. (408) 438-6506. 8-N-1, 24 hours, 300.1200 baud. Sysop Mike Floyd.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 257-1853. (300 baud). 1-N-8. 7 lines real-time conferencing, 2 channels of 2-party chats, very efficient electronic mail, scrolling bulletin board, linked to stations across the USA. Membership: Level I (e-mail capability) $15/month; Level II (no e-mail) $10/month. (408) 257-1966 voice.

Matchmaker San Jose. (408) 249-4566, (408) 249-4567, 24 hrs., 7 days, 300/1200. Matchmaker San Jose is the ultimate matchmaking/dating system for personal computer users. Soon to support interstate matchmaking. Call now and see the future of personal communications. Type "dym" at login. Sysop: The Matchmaker.

Dragon Flight. (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. Online quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

Vietnam Vets-The LooneyBin. Nancy and Todd Looney, sysops. Dedicated to 'Nam vets, their wives, lovers, and friends. Good friendly conversation plus referrals and counseling. Online 23 hours 3/12/2400. (408) 293-7894. FidoNet #143/27.

Public Domain Software Special Interest Group (PDS-SIG) BBS. San Jose, CA. (408) 270-4085, 8-N-1, 300/1200/2400, 24 hours. Features: 37 directories, 126 meg of files, extended time registration and membership. Public Domain Software Store, 10 Public Conferences. Find the latest and most popular programs and shareware in our vast library of files. Sysops: Bob Allen and John Lawrence.

The - Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

Phoenix Info. Sports betting, football, horse racing — Bay Meadows, Golden Gate Fields. Lotto and stocks coming later. Starting weekends while increasing days as interest grows. One ring and call back to get on. (408) 270-2661. Sysop: Jim Finnell.

The Wounded Land. (408) 736-6490. Active fantasy role playing games. 24 hours, 300 baud. Sysop: The Spirit.

Bay Area Bulletin Board. (408) 723-7238. 24 hours, world wide net mail, 66 megs of online programs for download, adult message area, several special interest areas. 8-N-1, 300/1200/2400 baud. Sysop: Jim Acker.

DYM #296. (408) 720-0724, 300 baud, 8-N-1. A BBS focused on personal e-mail and friendly exchanges of information. Features user match function and e-mail. five sub-boards including Public, Current Topics, User Activities, and two Adults Only sections. No fees required, but online registration/verification IS required. Sysop: Operator 161.

Tardis Information System. (408) 266-3555, 300 baud, Atari-oriented but all users welcome.

Midnight to 9 am only. Tardis Systems is proud to present the debut of a pseudo-real time game simulation called "Night Movement." The plot is to protect the fictitious San Jose Army Base from terrorist attack. There is space for 200 players, and it starts January 1, 1987. Sysop: The Doctor.

Computer Tyme. (408) 732-2187. 300/1200, 24 hours weekends, 7 pm-9am weekdays. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

The Bog BBS. San Jose, CA. (408) 270-4086, 8-N-1, 300/1200 baud, 24 hours. Featuring the largest selection of games for the following system types: IBM, Amiga, Commodore, CP/M, VAX. 66 meg of online capacity with over 32 meg already listed. This is now the second line of the PDS-SIG BBS. Games via Doors also available to registered members. Help directories for each system as well as file compression, game solutions, unprotects and a special members preview directory are featured.

INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Ease BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. Sysops: Stuart Smith and Eric Smith.

Professional Software Programmers Association. 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

The Dynamic BBS. (408) 972-9750, San Jose, 22 hours, 7 days, maintenance 5-7 pm daily. Registration required. Features: contests and prizes, 100 meg of d/loadable files and more. Coming attractions; multi-lines, on-line programs and games, multi conference areas. 1200/2400 baud, with limited access to 300 baud users. Sysops: Terry & Sharon, The Dynamic Duo.

The Portal System™. (408) 725-0561, 3/12/2400 bps, 8/N/1, 24hrs, live multi-user ChatLines every Mon., Tues., Thur., Sat. Conferences, Email, Matching, USENET Int'l. conf. net, UUCP, BITNET, ARPA mail gateways. Electronic Press Room, Document Transfer and many other apps. Fast, reliable, can reach 100,000+ people around the world. Nationwide, low-cost, access available. Say you saw it in *MicroTimes!*

ST-Hotline BBS. (408) 374-5739, 24-hours, 7 days, 300/2400 baud, Atari ST only, newest public domain software, news and message base, 20-meg hard disk.

Perigrine Data Systems BBS. (408) 997-6254, 24-hour, 1200/2400 baud, PC board. PC based BBS, ne fee. Features PC public domain software for DOS utilities, games, C and Assembler source, business and printer utilities. Conferences dedicated to DOS, communications, UNIX and PereLine technical support. Sysop: Einar Pedersen.

The Campbell BBS. (408) 379-4830. 3-2400 BPS, No Parity, 1 stop bit, 3/12/2400, N-8-1, 24-hours. No registration required, immediate access, MS-DOS-others, includes suport for "Bob's Term-Pro" terminal software. Sysop: E. Munson.

National Computer Club BBS. (408) 866-2670. 300/1200 baud, 8-N-1, 24-hours, 7 days a week. IBM and Apple II software, shopper service, 2 conference lines: general and adult BBS listings, UL/DL. Membership required for major functions. Sysop: Michael McCake.

Timex/Sinclair Users Of Silicon Valley BBS. (408) 735-7390. Public Domain Software Exchange. 300/1200 baud, 8-N-1, 24-hours, 32 lines. No waiting!

415

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, 300/1200 baud.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M. Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Sports for the serious fan! Latest scores, transactions, injuries and updates, plus the complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal I.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattail Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

ROOTS BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 664-2811.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 23 message boards restaurant, sales, Amiga, ST, women's forum, reviews, sci-fi, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Earth-Rite RBBS. We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

MacQueue BBS (415) 661-7374. 100% Macintosh BBS with 8 megs software for download, message base, and Fido-Net Mail (Net 125 Node 2). Instant access, 24 hours, 300/1200/2400 baud. See you on the Q!

MacCircles BBS (415) 484-4412. 24 hours, 300/1200 bps, Mac/Lisa downloads, message base, E-Mail.

Spiritual World. Center for sharing spiritual development. 300/1200, 24 hrs, (415) 366-9033.

Super Resume. A free resume composition system for software engineering and MIS professionals. Produces a detailed, accomplishment - oriented resume. Also the latest weekly FidoNews and FidoList, plus two unique free-form, full-text data base systems available for downloads. No charge. 300/1200, 8, 1, N. 24 hrs. (415) 546-0119 modem, (415) 788-6000 voice.

Co-Ed & Associates. (415) 938-9470. 24 hours, 7 days, 300 / 1200 / 2400. CPM / CPM+ / MS-DOS / Morrow / Zenith / PC and clones. Sysop: Werner L. Gumpert.

Humor & Wisdom. A board dedicated to the exchange of comic relief and things to ponder in a new age of consciousness. Free, as all things should be. 300/1200 baud, (415) 937-2508.

Open Campus BBS (415) 895-0135. Operated by San Leandro High School and Apple Eaters Users Group, 5 meg, 20 message bases plus library. 24 hours, 300/1200. Sysop: Bob Shayler.

Photobytes, a photography oriented BBS, features product information, help files, photo contest listings, plus much more. Sponsored by Wentling Camera Shops. 300 baud, (415) 439-2515, 24 hrs. 7 days.

The Castle BBS. (415) 355-8150, 24 hours. 300-500 baud, 8 bit, 1 stop, no parity. We have 4 message bases, e-mail and UL/DL. CBM oriented but all systems welcome.

Low Overhead BBS. User-friendly BBS, 24 hours, 7 days a week. IBM software, motorcycles and motorcyclists. (415) 763-6794 or (415) 835-9959.

Guideboard, Cabbie's Guide to San Francisco. Where to go for restaurants, doctors, auto repair, etc. The sysop gets his tips from driving a cab; the callers furnish the rest. The BBS also has an resident astrologer, Swami Tommy. The Swami gets his tips from the stars. Ask him any question. (415) 864-3858, 300/1200 baud.

Entrepreneurs BBS: Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

APT Action BBS. C64 board dedicated to exploring on-line entertainment. Free ACTION-AUT software. 24 hours, 300 baud, (415) 322-3213.

RSVP BBS. (415) 659-9169, 300/1200, N-8-1. 24 hours. Sysop Jim Thomas. FAUG Amiga User Group discussion and file area, Dr. Who forum, Sanyo, IBM, CP/M files, CP/M forum, Ohlone College forum.

Marin Community BBS (415) 459-3326. 300/1200 baud, 6 pm - 10 am M-S, all day Sunday. 520 ST/Atari information. Sysop Dave Powers.

MacCircles EBBS (415) 484-4412. 24 hours, 300/1200/2400. Running Red Ryder Host software on a Lisa 2/10 (Mac XL). Large software exchange, private mail system, public messaging.

Musician's Network BBS. Musician's information ex-

XT Turbo System $590

- XT turbo dual-speed 4.77/8MHz motherboard
- AT jr. case w/150W power supply
- 256K RAM installed
- Two 1/2 height 360K disk drives
- Floppy disk controller
- Mono graphic card
- Hi-Res mono monitor
- AT-style keyboard
- FCC Class B approved

AT Turbo System $1199

- AT turbo 6/10MHz motherboard
- AT case w/200W power supply
- 512K RAM installed
- One 1/2 height 1.2 M disk drive
- Western Digital floppy/hard disk controller
- Mono graphic card
- Hi-Res mono monitor
- AT compatible keyboard
- FCC Class B approved

System Boards	
640K XT 4.77/8 MHz turbo motherboard(0K)	95.00
640K XT 4.77/10 MHz turbo motherboard(0K)	105.00
640K/1 Meg AT motherboard(0K) 6/10 MHz, 1 wait state	435.00
640K/1 Meg AT motherboard(0K) 6/10 MHz, 0 wait state with 2 serial and 1 printer ports	480.00
Computer Drives	
Fujitsu 1/2 height floppy (360K)	77.00
Teac 1/2 height floppy (360K)	88.00
Teac quad-density 1/2 height floppy (1.2M)	119.00
Seagate 20M (ST225) hard-disk	270.00
Seagate 30M (ST238) hard-disk	299.00
Seagate 30M (ST4038) hard-disk	550.00
Miniscribe 40M (6053) hard-disk	650.00
Keyboards	
XT Compatible (BTC 5060)	45.00
XT Compatible w/AT-style (5160)	50.00
XT or AT compatible (BTC 5060)	50.00
XT or AT compatible (Maxiswitch)	65.00
XT or AT compatible with expanded cursor key	70.00
Monitors	
Casper monochrome monitor (12")	85.00
Samsung monochrome monitor (12")	85.00
NANAO monochrome monitor (12")	120.00
Quimax monochrome monitor (14")	140.00
Casper color monitor (14")	260.00
Quimax color monitor (14")	295.00
CTX color monitor (1")	260.00
Casper EGA monitor	395.00
NANAO EGA monitor	395.00
CTX EGA monitor	395.00
Computer Hardware	
XT case w/150 Watt Power Supply	80.00
AT case w/200 Watt Power Supplyl	160.00
150 Watt Power Supply	54.00
200 Watt Power Supply	85.00

Display Cards	
Monochrome Graphics w/printer port	60.00
Color Graphic	45.00
Color Graphic w/printer port	60.00
Enhanced Color Graphics (EGA)	175.00
EGA w/printer port	185.00
Paradise EGA	205.00
Computer Accessories	
Printer cable (6')	8.00
Serial cable (6')	8.00
Joystick	20.00
Logimouse C7	80.00
Surge protector power strip	10.00
Surge protector power strip pack	25.00
Diskette storage file (holds 100)	10.00
64K RAM (150 ns)	Call
256K RAM (150 ns)	Call
64K RAM (120 ns)	Call
256K RAM (120ns)	115.00
DOS 3.2	85.00
Peripheral Cards	
Floppy Disk Controller (FDC)	26.00
Multi-I/O Card	70.00
XT I/O Card	65.00
AT I/O Card	65.00
XT 576K RAM Card	45.00
XT 2 Meg RAM Card	115.00
AT 3 Meg RAM Card	180.00
Parallel Printer Card	18.00
Serial Port Card	30.00
Serial Port Card w/clock	35.00
Game Port Card	17.00
Clock Card	30.00
Adaptec 2070A Hard Disk Controller	125.00
Western Digital XT Hard Disk Controller	85.00
Western Digital AT floppy/hard Disk Controller	170.00
Printers	
Epson DX10	170.00
Epson LX86	199.00

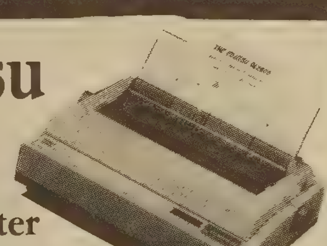
5856 Geary Blvd.
San Francisco, CA 94121
(415) 751-6046 751-6048

EmPac

1180 Miraloma Way, Suite F
Sunnyvale, CA 94086
(408) 749-9935 749-8998

Cypress Distributing

Fujitsu



DL-2600 PRINTER
24 Wire Dot Matrix Printer

- 288 cps (draft 12 cpi) 96 cps (LQ 12 cpi)
- Friction feed, bidirectional tractor standard
- Three resident letter quality fonts
- 8K buffer
- IBM graphics and Diablo 630 emulations
- 16-digit LED display
- Centronics/RS232C interface standard
- Available in color

Suggested List
$1495.

- 220 cps (draft 10 cpi) 44 cps (NLQ 10 cpi)
- Excellent paper handling, instant transition between continuous form and cut sheets
- Friction feed with rear tractor standard
- 55 dba noise level for "office quiet operation"
- Field upgradable to 8-color printing
- 80 columns (DX2100)/136 columns (DX2200)
- Centronics or R232C
- 1 year warranty

Suggested List
$545.
(DX2100)

Cypress Distributing Company®

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

80 Granada Avenue
Long Beach, CA 90803
(213) 434-4609

Brother Canon Emerson Seikosha Panasonic
Prometheus Sanyo Sunol Quimax Ziyad C. Itoh

READ ME

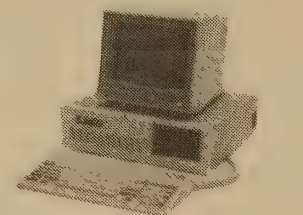
Model A
XT COMPATIBLE SYSTEM
- XT motherboard with 8 slots
- 256K installed RAM
- 360K floppy disk drive w/controller
- Monochrome display card
- Hi Res monochrome monitor
- 150W Power supply
- Keyboard
- handsome flip top case

ONLY **$489**

SUPER MODEL AT COMPATIBLE
Includes: • 512K RAM • 1.2 MB Teac Drive • Western Digital • HD & FD Controllers • AT Keyboard • Monitor & Card
$1179

Model B
XT TURBO SYSTEM
- XT Turbo motherboard
- 640K installed RAM
- 360K disk drive w/controller
- Monographics card w/printer port
- Hi Res monochrome monitor
- 150W Power supply
- AT style keyboard
- Handsome flip top case

ONLY **$539**



20 MB Seagate ST225 HD includes controller. . **$339**
CGA Card & CGA Monitor. **$349**
EGA Card & EGA Monitor . . . . **.599**
Citizen Printer includes cable **$195**
More Than 300 Public Domain Software . . . . **$2.00 Disk**

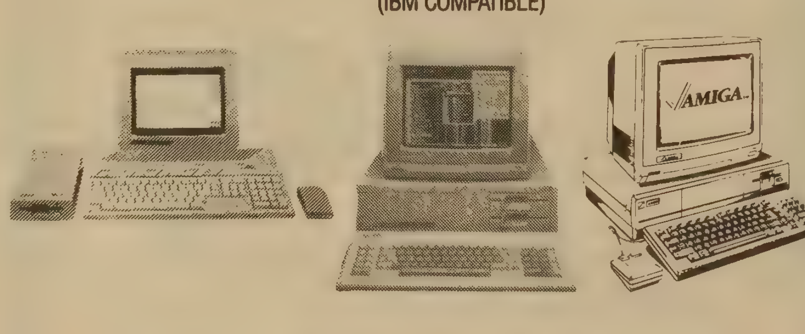
Order now, you wil get free powerful software
PC Accessories are also available
CALL US for your own tailored PC system.

PC NEST

345 E. Santa Clara St. Suite 206
San Jose, CA 95113 (Between 7th & 8th St.)
(408) 279-1397

Business hours:
M-F: 10AM-7PM
S: 10AM-4PM

ATARI **COMMODORE** PC-10-2 (IBM COMPATIBLE) **AMIGA**



YOU MAKE THE CHOICE FOR YOURSELF
If You Need Graphics, Music,
Desk Top Publishing, Business,
Cad or Video
WE HAVE THE SYSTEM FOR YOU

Atari ST Systems
Keyboards
Modems
Printers

PC-10-2
Hard Disks
Plotters
Monitors

Amiga Systems
Video Digitizers
Expansion RAM
Xerox Color Printer

HT ELECTRONICS, INC.
(Corner of Maude & Mathilda Aves.)
(in Alpha Beta Shopping Center)
346 W. Maude Ave.
Sunnyvale (408) 737-0900

HOURS
M-F 9:30-6:00, S 9:00-5:00

Complete Software
for
Amiga, Atari ST
and Commodore 64/128

Authorized Service Center
for all Systems

change. Space for want ads, bulletins, and public mail. Uploading and downloading available. BBS operates on Fido Software. 8 bits, no parity, 1 stop. Weekends only, 6pm Fri-6am Mon. (415) 893-1618. Sysop: Erik E. Hayles.

520 ST Atari BBS (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI / music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

AutoCAD RBBS (415) 547-5264. 24 hours, 7 days, 300/1200 baud, 40 megs online. Sysop Robert Schultz. Supporting AutoCAD, the world's most widely used PC based design/drafting software. There are 4 megs of AutoCAD drawings plus third party public domain programs that work with AutoCAD (i.e. menus, Autolisp and lisp macro libraries) available to download.

Insight BBS (415) 229-0551. 300/1200 baud, 24 hours, 7 days, 8-N-1. Now running PC-Board on an IBM clone with 20 megs on-line. The board now has 7 conferences and is looking for "message" oriented people who love to talk. There are no status levels, and everyone is invited! Carl Orsi, sysop.

AIDS Information BBS (415) 626-1246. 24 hours, 300/1200 baud. Sysop Ben Gardiner. Free. All welcome. Statistics from Atlanta and San Francisco displayed, updated regularly as received. Sample Q & A about AIDS, based on clinic and phone exchange experience. Mail send/receive on AIDS; please not on other subjects due to limitation of one phone line. Please also no more than one hour per day. Mobilization Against AIDS information here. Calls to this BBS never disturb anyone.

Actrix Enthusiasts RBBS / RCP/M (415) 968-1783. 300/1200 baud, 24 hours, Free. Registration required. 46 megabyte CP/M system. In Mountain View. Sysop: Andy Bajka.

BBS-JC Just Computing. (415) 961-7250, 7E1/8N1. 24 hours/7 days, 300/1200/2400. Amiga and CBM public domain software. If it's new, see it here first! 8 sections including Commodore announcements are currently in operation. This board is especially for "Silicon Valley" Commodore users. Sysops: Thad Floryan and John Cronin.

Bug's Net HP. This bulletin board has over 20MB of PD software available. Message areas include HP300, IBM PC Technical and consultants forum. Fido node #10/777 (pending). 300/1200/2400 baud. 24 hours. (415) 236-1823. Sysop: John Buginas.

Professional Software Programmers Association. 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

A.M.U.L.E.T. II: Inform-Serve. (415) 989-5054, 24 hours, 7 days, 300/1200 baud. 95+ subboards, on-line gaming and many RPGs, 52 MB of on-line storage. Sysops: The Starmaster/Magician Merlin.

L'Expres! (415) 538-6340. Atari, 300 baud, 9pm-6am daily. Runs BBS: Express! software. Sysop: Greg Manubay.

The Dead Knight's Tavern. (415) 364-6877. Fantasy role-playing bulletin board system. 24 hours at 300 baud. NO FEE. System Overlord: Shane White a.k.a. Samuel Kline.

MicahLink. Free, 24 hours, 7 day private BBS for Mac users. Sponsored by Micah, Inc. Online support, discussions, directory of MicahDrive dealers. (415) 771-1119 modem, (415) 331-6422 voice.

The Pirate's Hollow BBS. 24 hours, 300 baud. Ye Cap'n: The Atari Pirate. (415) 593-6784.

Draco-Net Prime. (415) 474-8608, 300/1200. Official BBS for: A+ Magazine, International Apple Core, San Francisco Apple Core, Apple Three Users of Northern California, and Carrier.™ 24 hours, no fee. Leonard Reed and Jono Smith, Sysops.

Recovery BBS. (415) 621-5206. FidoNet Nodes 125/9 and 125/31. If you are in a 12 step recovery program, or think you have a problem with alcohol or drugs, or if you are compulsive about eating, smoking, or sex and love, call. Share your experience, strength and hope in message sections that include AA, NA, CA, OA, SA, SLAA and Alanon/CA. There are meeting listings in the file areas.

Cat's Tail Mega-System. (415) 349-TAIL (349-8245). All welcome. Nearly 100 public message forums, both computer- and non-computer-related subjects. Five on-line games, public domain file transfers for IBM, Apple, CP/M. Running on Apple IIGS. 300/1200, 24 hours.

Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles, etc. Christian TBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA), (201) 736-1859 (Newark, NJ), (813) 269-7957 (Okeechobee, FL).

POPnet Berkeley iş 15 lines of fun and games for all. Chat, CB channels, games with others. Mail and bulletin boards, of course. Not free, but cheap. 24 hours, 300/1200, (415) 527-4510. **POPnet San Ramon** is 10 lines of fun and games. Chat, CB channels, games with others. (415) 830-1191. **POPnet Walnut Creek** is 19 lines of fun and games. Chat, CB channels, games with others. (415) 932-4263.

Vaudeville Local. (415) 337-8693. 24 hours, 8-N-1, 300/1200. Vaudeville Local is a BBS dedicated to vaudeville and circus arts. Sysop: Arthur Conway.

Crossroads BBS. (415) 968-9341. 300/1200 baud, 8 bits, no parity. 24 hour operation. File transfer for IBM/compatibles, Commodore 64. Message bases include space travel, singles, political dissent, sexual freedom, stories, poetry, musician's referral, programmer's corner, adventure gaming. No fee. Mike Macgirvin, sysop.

LaserWriter BBS. (415) 261-4813. 300/1200 baud, 24 hours. BBS dedicated to desktop publishing. Sysop answers all related questions. Located within Allen Computer Graphics, desktop publishing specialists. Files, messaging, user groups, e-mail. Upload direct for LaserWriter printout or to order other products offered by Allen Computer Graphics. Macintosh and other computers welcome. Sysop: Tom Allen.

The Records Department. (415) 426-0470. User registration required. Public domain and shareware programs available for download at 300/1200/2400 baud. Caters to IBM; also Apple, Commodore, Atari. Large, friendly discussion section with something for everybody; games, voting booth, technical help. Bill McCauley, sysop.

Silicon Valley Computer Society BBS. (415) 968-6891, 300/1200, 24 hours. Sysop: Herb Shear.

Computer Adventure Center, C.A.C. 24 hours daily, 300-2400 baud, in Fremont. No fees, IBM based but open to all callers. New BBS#: (415) 490-7365. Sysop: Al Demar.

Breakthrough Software BBS. Support for TimeLine users. (415) 892-0408, 300/1200/2400 baud, 8-N-1. XMODEM or Kermit protocols. 7 days, 24 hours.

EBMUG BBS. Running 24 hours a day, 300/1200, 8-N-1 at (415) 848-2609. Private mail system, public messages, Macintosh software.

KAY+FUN RCP/M. (415) 572-8219. MS-DOS, CP/M, modems, business applications (e.g. *dBASE, Lotus, Reflex*, Wordproc). General discussion of commercial and public domain software. Also public domain and private file transfers and more. FREE online registration. 300/1200/2400. Sysop: Ernest Hintz. Sponsored by KAYFUN users group.

Programmer's Circle. (415) 239-1722. 8-N-1, 300/1200, weekdays 3 pm-11pm. The Programmer's Circle specializes in carrying source code and tools to aid the programmer. Special attention is given to the Macintosh and Apple II computers, but all computer users are welcomed. Data files are online for the Mac and Apple II computers. Sysop: Roger Gibby.

The Live Wire. (415) 540-0529. 300/1200, 24 hours. A digital magazine for the graphic-arts community (printers, typesetters, self-publishers, artists). Free. Sysop: Rick Hepting.

SIGSIG BBS/RCP (formerly MEBBS) is back online! Member of the FOG and PRACSA networks. Supporting CP/M and MS-DOS public domain software and a public-access message system. No fees, novices welcome. Online registration for FOG, PICONET and PRACSA members. 24 hours, 300/1200/2400 baud. Sysop: Jim Switz. Located in Mountain View. (415) 968-7369. Call today!

Cold Moon On A Single Star. (415) 668-6101, San Francisco. 24 hours, Fido board. Chinese culture, history, language, Chinese cooking, discussion, etc. Asian community events. Sysops: Joseph Puig and Susan Chen.

Dr. Don's TBBS. (415) 885-1973, San Francisco. 300/1200, 24 hours. CarTalk and SportsTalk discussion and special interest boards. Private e-mail. All automobile sportscar enthusiasts, sports fans, softball-baseball-football players are invited to call. Sysop: Dr. Don. Co-sysop: Bimmer Pilot.

Centerville RBBS. (415) 793-3037. 300/1200/2400 baud, E-7-1 or N-8-1, 24 hours daily. Sysop: Joe Halbleib.

The Board. (415) 652-8277. 1200/2400 baud, 8-N-1, 24 hours. Public and private conferences, technical support. For AT&T and compatibles; AT&T PC support conferences. Associated with Bay Area AT&T PC6300 Users' Group. Sysop: Troy Blackburn.

Attitude Adjustment. (415) 939-1639. 8/N/1, 24 hours, 7 days, 300 baud. Call today and get your Attitude adjusted. . .just for fun. If you have an Attitude and want to tell people about it, you know where to call. Small but growing system: 8 message bases, private e-mail, voting, textfiles and a few downloads. Emphasis is on interaction between Adjusters on the message bases. Sysop: Rick Adjuster.

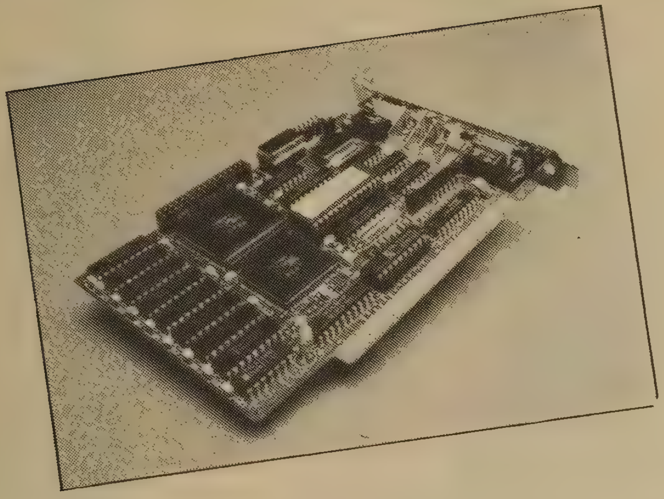
Dial-Your-Match #341 in Hayward. (415) 489-2572. 24 hours, 7 days, 300/1200 baud, no charge. Sysop: The Matchmaker.

Yet Another BBS. (415) 689-8952. 8-N-1, 300/1200, 24 hours, 7 days. Upload/download, entire public domain library of "The Ulternate Source." All makes of software, message base, e-mail. Friendly sysops! Jim and Alex Stewart.

Track 3 BBS. (415) 540-7570, 300/1200 baud, 24 hours, Berkeley. for railfans, roller coaster enthusiasts, transit issues, and the like. Sysop: Robert Parks.

Infolinc RBBS. (415) 672-9270. 8-N-1, 300/1200/2400 baud, over 500 files online, conferences, doors, online chat with other users. Special private line for supporting users, running PC

THE BEST OF BOTH WORLDS.



Super EGA Adapter

Super is the word for this new short EGA card which does it all. Check these features :

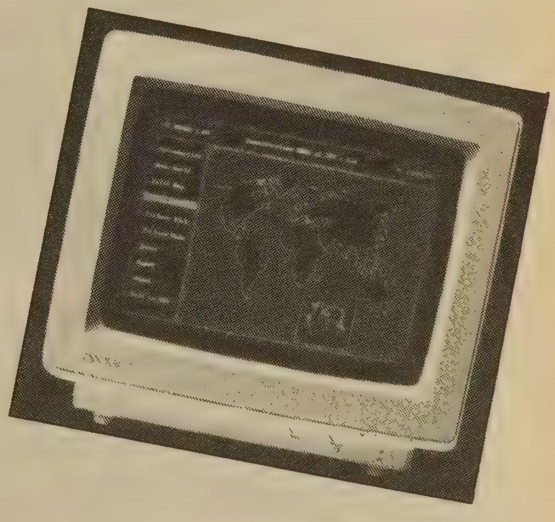
- 132 column color text in EGA mode
- Drivers for Windows, GEM, AutoCad, Lotus 1-2-3, and Symphony
- Flicker free display
- Scan doubler for enhancing CGA text and images
- Supports 256Kb of memory
- Fully compatible MDA, CGA, Hercules, Plantronics and EGA

Genoa
SYSTEMS CORPORATION

Taxan Multivision 770 Monitor

	TAXAN MULTIVISION	NEC MULTISYNC
RESOLUTION	800X600	800X560
DISPLAY AREA	AUTOMATICALLY ADJUSTS	REQUIRES ADJUSTMENT
HORIZON. SCAN FREQ.	15 TO 35 Khz	15 TO 35 Khz
VERTICAL SCAN FREQ.	50 TO 90 Hz	50 TO 60 Hz
DOT PITCH	0.31mm	0.31mm

TAXAN



Available from these EGA Specialists.

A&A Engineering
533 Crosslees Dr.
San Jose, CA 95111
408-972-8721

Able Micro Computer
678 Ralston Ave.
Belmont, CA 94002
415-593-2253

Computer Biz
10885 N. Wolfe Rd.
Cupertino, CA 95014
408-725-0586

Computer Biz
4482 Pearl
San Jose, CA 95136
408-723-3956

Computown
760 Market St., Suite #219
San Francisco, CA 94102
415-956-8696

Infomax
761 E. Blithedale Dr.
Mill Valley, CA 94941
415-388-7775

Infomax
One Market St.
San Francisco, CA 94105
415-929-2280

Infomax
1300 Mt. Diablo Blvd.
Walnut Creek, CA 94596
415-356-6565

Microtech
5835 Doyle, Suite #101
Emeryville, CA 94608
415-658-1433

Top Tek Micro Center
1520 Taraval
San Francisco, CA 94116
415-564-3500

COMPAC

WE WILL BUY YOUR EXCESS
DEC EQUIPMENT AND/OR TRADE YOU
FOR AN I.B.M. CLONE
MADE IN THE U.S.A.
1 YEAR WARRANTY
DECTECH
1445 KOLL CIRCLE SUITE 103 SAN JOSE, CA
408-275-1133
digital
Registered trademark of Digital Equipment Corporation

EFI'S
Discount Computers
Specialist in IBM PC & COMPAQ Hardware, Software, Accessories & Supplies

IBM XT or AT $CALL

CLONES FROM $399

COMPAQ
Portable
Portable II
Deskpro
Deskpro 286,386

NEW AST AT 286 CALL

C A L L

SPECIALS
Toshiba 1100 Plus..... 1525
Paradise Auto EGA 325
Everex 1200 B 99

WE ALSO SELL: AT&T, TOSHIBA, ITT, SHARP & NEC

SOFTWARE	
Ventura	565
Word Perfect	209
Paradox	399
Stella Bus. Graphics	79
d/Base III +	399
Framework II	399
FastBack	99
Word Perfect	219
Turbo Pascal & Tutor	85
Lotus 1-2-3/Symphony	$call
MS C Compiler	289
MS Bus Mouse	129
MS Word	225
Norton Utilities	63
Turbo Lighting	49

SUPPLIES	
Xidex DS/DD	9.95
Adivan Hi Dens	25.95
Ribbons/Chips/Paper	$call

HARDWARE	
Six Pak 384K	209
Intel Above Board PC/AT	259/365
Video 7 EGA Deluxe	339
I/O Card for XT/AT	79
AST Advantage 128K	349
Generic mono/color	89
Hercules color/mono	$call
8087/80287	119/199
Hayes modems	$call
Orchid Tiny/286E	409/779
NEC GB-1	369

MONITORS	
PGS HX-12/Max-12	419/159
Amdek 410A	155/489
NEC multisync	585
Samsung Amber/EGA	89/399
Magnavox RGB 80	309
Magnavox Color 80	299

PRINTERS	
Epson; Toshiba, Brother, RCA, Primages, Diablo, NEC, Okidata	$call
Auto Printer Switch	69
Citizen 120D/Premier 35	195/469
HP, Canon, Quad Laser	$CALL

DISK DRIVES	
20/30 MB	349/399
Half ht./Full ht. drives	$call
Plus 20MB Hard Card	669
Iomega 20 + 20	2159
Archive 60MB tape BU	709
Irwin 10MB tape backup	369

NEW!
COMPLETE DESKTOP PUBLISHING SYSTEM.
CALL FOR GREAT PRICES. ASK FOR BRENDA.

Free delivery and installation of systems within 30 miles.
Free in-store installation of any product.

CALL US FOR YOUR PRICE ON ANY PRODUCT.

VISA

HOURS: MON.-FRI. 10-6, Sat. 10-2
3441 GOLDEN GATE WAY, LAFAYETTE
(415) 283-1700

MasterCard

CALL BEFORE YOU BUY

Prices may change without notice 90 day warranty on all products
IBM is a registered trademark of International Business Machines Corp.

Board 11/6/E, 24 hrs. Sysop: John Palmer.

DYM #56. (415) 964-3255. 8-N-1. 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adults Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

Palladin BBS. (415) 332-1655. 1200 baud, 8-N-1, 7 days, 24 hours. Sysop: Al Kalian.

The DeskTop Publisher. (415) 856-2771. 300/1200/2400 baud, 24 hours, 7 days. Dedicated to desktop publishing, with particular emphasis on the use of DOS based hardware and software. Upload / download / messages/conferences. Anyone interested welcome. No fee. Registration required for full participation. Sysop: Freeman Bradford.

The Nimitz DownPort. (415) 276-3677. 8-N-1, 24 hours, 7 days, 300/1200 baud. The Nimitz DownPort offers a wide variety of message bases including Adult. With a BBS that has parties, educational offerings, discussions with nationally- and locally-known "geniuses" and experts, and "hands-on" role-playing games, there is no reason not to dock here. Call today and be a part of tomorrow. Sysops: Lady Godiva and Portmaster Kevin Munrow.

Marin-Sonoma PC Users Group BBS. (415) 927-1216. 300/1200 baud, 8-N-1. Sysop: Howard Leistner.

California ConneXion Party-line. (415) 927-2739. An adult oriented multi-user, multi-interest system featuring matchmaking, 12 public message boards, on-line chat with other users, questionnaires and more! Very fast operating system. 7 meg system. Currently operating with 3 lines—more lines to be added soon. 8-N-1, 300/1200/222400, 24 hours, multi-line system on rotary. Sysop: Alan.

Impeesa's Path. (415) 582-4863. 1200/2400, 8-N-1, 24 hours. Focused on outdoor activities. Conferences on camping, hiking, fishing and hunting, photography, Boy Scout activities. Also features "Doors," supports graphics. Sysop: Ed Reardon.

The Wizard Net. (415) 481-8413 San Leandro; (415) 232-6981 San Pablo. Full duplex, 1 stop bit, no parity, 6 am-6pm M-F, 24 hours weekends, 300/1200 baud. A user friendly system that utilizes Commodore color graphics. The more time that you put into the system the more you will be able to get out of it. System has bulletin boards, e-mail, voting booth, a chat feature, ul/dl, and online games. There are no fees, and everyone is welcome. Registration required. Sysops: Dave Rasmussen, Keith Parrish, Olivia Parrish.

AI-NET. Public OPUS board with 20 MB of files. Echo newsgroups for dBASE, Technical Forum, Mainframe Forum, Software Evaluation, Buy/Sell, National Mail, and more. Available between 3 am and 11:30 pm daily. 300/1200 settings: 8-N-1. 125/125 in the Matrix. (415) 776-6628.

SFPCjr UG BBS. Sponsored by the SF PCjr User Group. 1200 baud, 8-N-1, 24 hours. Sysop: Larry Buoncristiani.

RSVP BBS. (415) 659-9169, 24 hours. Japan mail exchange, Doctor Who, Ohlone Forum, Amiga Music-net and Tech-net. IBM/Amiga/Atari files. Always something new! Sysop: Jim Thomas.

tsunami bbs. (415) RAM-2-RAM. Graphics specialty board for most microcomputers. Supports wider interchange of graphics files between "incompatible" systems. U/L's and D/L's for graphics programs and picture files. Collects and distributes p-d graphic format conversion programs, as well as picture files in Microillustrator-compatible, IFF and CocoMax formats. 300/1200 baud, 8/N/1, 24 hours.

Trading Post BBS. Information Exchange system, (415) 948-4163. Open system with more than 20 discussion groups covering everything from Atari to ZCPR3. Online games and 200+ articles. Free. Sysop: Lars Rosengreen, a.k.a. Eskimo.

SPACE-The Stanford Palo Alto Computer Exchange. A BBS for PC professionals and power users. Validation required. (415) 964-9309, multi-node, 2400/1200 baud, N/8/1, 24 hours. Sysop: Jay Fox.

Production World On-Line. (415) 571-6160, 300/1200/2400 baudd, 24-hours. An additional service from **Production World On-Paper**, a printed publication for the motion picture film, broadcast television, video and audio communities featuring Northern California people and facilities. A variety of information and message bases available. Sysop: Wes Dorman.

Amiga Addicts Anonymous BBS. (415) 283-5469 "BUD-LINX." 24-hours, Xmodem, 300/1200 baud, N/8/1. Sysop: Randy Spencer.

Aardwolf Express Family Forum. (415) 651-4147. 24 hours a day, 7 days a week. 300/1200/2400 baud. Located in Fremont CA. System offers: *Infomat*, an electronic computer magazine; Showcase, shareware and demonstration programs download; complete King James Version of Bible online; Discovery (Christianity); Friends (user profiles and interests) and user opinion polls. Sysop: Veit Anton Johnson.

The Guardian. (415) 644-6806. The Berkeley Police Department's public relations and community service bulletin board. Lists crime prevention information including neighborhood and business watches, crime statistics and recent press releases. Community organizations are encouraged to call and post events. Everyone invited, you need not be a Berkeley citizen. 24-hours, 7 days a week, 300/1200 baud. Sysop: Officer Carl Orsi.

Commodore Connection BBS. (415) 458-1005. 1 stop bit, no parity, 7 or 8 bit word, 300/1200 baud, 24-hours. Sysop: Clint Beers.

AsKKey XPress BBS. (415) 657-1728. AE Line, 300/1200 baud, 8-N-1, 24 hours, 20 meg system, private E-Mail, several sub-boards, online games. Apple II downloads. No Fee.

S.F. Tea Room. (415) 993-5410. 300/1200/2400 baud, 24 hours. Match Function, IBM Software (3 sections), Macintosh Software (12 sections). Sexually oriented. Sysops: Steve and Ken.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPRS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

Willy-Net. (619) 535-0816. 300/1200, 8/N/1, Large download and message area. IBM. Sysop: Willy Bergner.

702

Public Domain Software Interest Group. (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

707

Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Survival Communication Forum. Fido 125/7. Focusing on preparedness and self-sufficiency. Multiple message and file areas. A MedNet member system featuring weekly CDC reports, medical text and news files. Open to all. 23 hours daily, 300/1200 (707) 545-0746. Don C. Kulha, Sysop.

R.A.G. (Redwood Atari Group) BBS. 300/1200, 24 hrs. (707) 539-8889. Sysop: Bill Marlin.

STATE BBS ST and 8 bit Atari. Supports all Atari computers. On line surveys, public domain software, discussion and a built in adventure game (if you can find it). 300/1200 baud, 24 hours a day, full duplex. Sysop: Mikkel Lawrence. (707) 585-2194.

Softy's BBS. (707) 437-4334. 24 hours, 8N1, full, 300/1200. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. John Hagen, sysop.

UNIBLAB BBS. (707) 422-1669, 8-N-1, 24 hrs. 300/1200 baud. Community-oriented BBS. On-line games, SIGs, XMODEM protocol, no fee. Sysop: Ben Harris.

Sigma BBS. (707) 274-8561. Call this BBS for the best IBM-PC/compatible RBBS in the Redwood Empire. Over 650 downloadable programs. We feature "Doors" software for your adventure playing moods and Tradewars II, a multi-player galactic challenge. Tradewars can support up to 70 players and features sector movements and planet creation. We also support the latest in RBBS-PC Bulletin Board Software, Procomm communication with utilities software and many other programs. 24 hours, 300/1200/2400, 8-n-1. 72 minutes allowed daily. Sysop: Randy Sun.

Valley of the Moon BBS. (707) 996-7922. 24 hours, 7 days. 300 baud. Free. Primarily set up for Radio Shack and COCO II, but all are welcome. Come join us. Sysop: Wes Ford.

Newsstand. (707) 539-3612. 300/1200 baud, 24-hours. Discussions on philosophy, politics and other topics. No Fee. Sysop: Bryan Magers.

714

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Computer Consultant's Network problems, solutions for business,legal and engineering problems. Referral service. (714) 982-5994 intro file.

Environet. (714) 731-6439, 300/1200, no parity, 8 bits, 1 stop bit. David Salahi, sysop. The online source of information and contacts for the environmental community. To log on, use user id 105, password PARKS.

El Toro RBBS/RCPM. (714) 855-0672. 24 hrs. 7 days/week. 300 / 1200 / 2400 baud. No charge, open access, no registration. Specialize in ZCPR3 and CP/M PD utilities. Sections for AMPRO, SB180, dBase II, TPascal, Modula-2, Wordstar, ZCPR3, modems, SIGM and utilities. Over 3000 programs in 88 megabytes online. Public E-mail system. Easy to use ROS system. The collection point for Modula-2 in So. Calif.

K-WEST. (714) 646-3060. 8-N-1, CP/M and DOS. 24 hours, 300/1200/2400. Sysop: Peggy Lloyd.

The Byte Zone BBS. 7 days, 24 hours, 300/1200 baud. Serves all Tandy computers and many others, including MS-DOS. Features adventure help files, electronic mail, message bases and download menu. Sysop: Franco Collino. (714) 639-3566.

Easy On of Moreno Valley. (714) 924-4324. Offering 65 meg of public domain (5000 files) for IBM and CP/M operating systems—Kaypro 10 networked. 2nd biggest library in

Dealers & Consultants Only

Corporate & Retail Customers Please Call for Quotes

Service Contracts available

IBM

AT Basic	2195
AT 339	3450
XT Basic	895
XT 286	2350

Call for New IBM Product Line

COMPAQ

Deskpro 386 40/70/130	$4450/5095*/6095
Deskpro 286 Model 1	1795
Deskpro 2 Dr. 256K	1150
Portable II Model IV	2850

Purchase Orders Accepted

PEACHTREE 10 & 20 MEG Tape Back-up . . . 195/275

IBM

Mono Monitor/Adapter	$210/185
Color Monitor/Adapter	499/195
Pro Printer/XL	620/395
EGA Monitor/Adapter	369/555
DOS 3.2/3.3	68/Call

Compaq

Amber/EGA Monitor	195/549
Color/EGA Adapter	155/429

All Compaq Products in Stock

Floppy Drives

Fujitsu 360/1.2	69/120
Toshiba	79/130
Teac	85/140

Seagate Hard Drives

20 Meg w/Controller	299
30 Meg w/Controller	335
30 Meg ST 4038 Reduced	515
40 Meg ST 4051	635
40 Meg St 251 ½ Height	559
80 Meg St 4096 Reduced	875

Printers

Okidata

182/192+/193+	235/375/465
292E/293E	435/585

Toshiba New

New 321E/341E	525/675
New 3511 Model II/351 color	895/1195

Hewlett Packard

Lazer Series II	1695
Lazer Jet 500+	3295

Monitors

Thompson Color	269
Packard Bell Mono Chrome	85
Packard Bell EGA	395
Samsung Mono Chrome	85
NEC Multisync	535
Sony Color with Remote	375
Sony Multiscan	579

Intel Math Coprocessor

8087-3/80287-6	95/160
8087-2/80287-8	140/239
8087-1/80287-10	195/295

Drams

256K, 128K, 64K
Please Call for Quotes

Epson

LX86/FX86E	185/350
FX286/FX286E	435/495
EX800/EX1000	415/639
LQ800/LQ1000	465/645
LQ2500/Epson Laser Printer	899/1450

Toshiba Computers

T1100+ (New)	1395
T3100+	2695
Micro Soft MS Dos 3.2	63

GENERIC XT & AT COMPUTERS AVAILABLE low cost CALL

D-DATA

SALES/SERVICE/REPAIR

4742 Woodman Avenue
Sherman Oaks, CA 91423

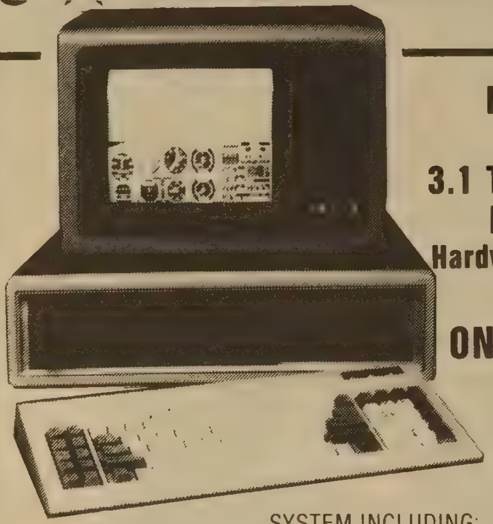
Visa
MasterCard

Dealers and Consultants please call for our Dealer price list.

For phone order call:
(818) 905-0994 (213) 859-3410

☆ ★ ☆ 2nd Anniversary Sale!

TURBO-PLUS SYSTEM



RUNS 4.77 MHZ
OR 8 MHZ
3.1 TIMES FASTER THAN
REGULAR PC/XT
Hardware & Software Switch

ONLY $675^00

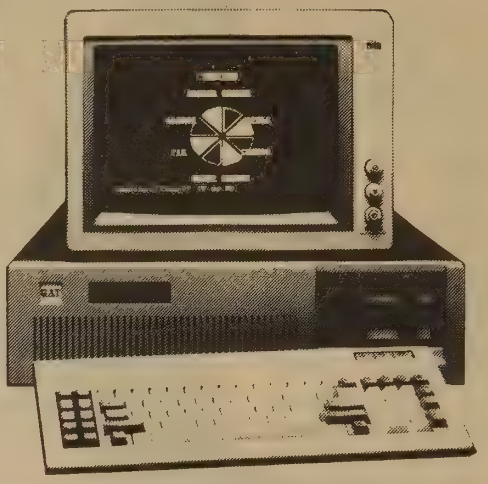
FREE MS-DOS BOOK

SYSTEM INCLUDING:

- TURBO-PLUS MB W/640 K, BIOS, 4 LAYER
- NEC V-20-8 CPU
- 2 DS/DD SLIM DRIVE
- SERIAL/PARALLEL/GAME PORTS
- CLOCK/CALENDAR
- 150 W POWER SUPPLY
- AT LOOK-ALIKE KEYBOARD
- SPECIAL TURBO CASE WITH LIGHT INDICATOR AND SPEED SELECTION

★ 1 YEAR WARRANTY

GAT-286 SYSTEM



ONLY

$995^00

REG. $1395.00

FREE MS-DOS BOOK

AT SYSTEM INCLUDING:

- 4 LAYER 6/10 MHZ MOTHERBOARD
- 640K RAM ON BOARD
- AT TYPE KB, 200W POWER SUPPLY
- FDC/HDD CONTROLLER
- 1.2 MB FLOPPY DRIVE
- AT METAL CASE

★ 1 YEAR WARRANTY

BABY-286
COMPATIBLE SYSTEM

ONLY

$875^00

FREE MS-DOS BOOK

- 80286 XT SIZE MOTHERBOARD
- 6 M/10 M DUAL SPEED SWITCHABLE
- 640K MEMORY – EXPANDABLE TO 1M
- MINI AT CASE
- KEYBOARD
- 180 W POWER SUPPLY
- FDC/HDC CONTROLLER
- 1.2 MB FLOPPY DRIVE
- CHIP TECHNOLOGY CHIPS SET
- ON BOARD CLOCK/CALENDAR

MONITORS SPECIAL ★ ★ ★

Monochrome Graphics Card + TTL Monitor	$149
Color Graphics Card — RGB Color Monitor	$345
EGA Card + EGA Monitor	$545
EGA Card (640 X 480, 132 Color) + NEC Multisync	$775

THIS MONTH'S SPECIAL

INTERNAL MODEM (1200 BPS)	$ 99
EXTERNAL MODEM (1200 BPS)	$119
20MB HARD DISK (ST-225) W/W.D.C.	$349
FORTIS DM2015 PRINTER (200 CPS)	$349
PANASONIC 1080 I PRINTER (120 CPS)	$199

ADD-ON CARDS FOR PC/XT/AT

3M Multifunction Card for AT, OK Memory, Serial/Parallel 1 Game, 2nd Serial Option	$135
2 M E.M.S. Board for AT w/Software	$119
2 M E.M.S. Board for XT w/Software	$105
Combo I/O for AT, Serial/Parallel/Game	$ 69
Combo I/O for XT, Serial/Parallel/Game/Clock/Calendar	$ 69
1.2 M Floppy Controller for PC/XT/AT	$ 75
Multi I/O, Floppy Controller, Serial/Parallel/Game/Clock/Calendar, 2nd Serial Option	$ 79
Monochrome Graphics Card	$ 65
Color Graphics Card	$ 55
Game Card	$ 25
EGA Card	$185

TERMS:

1. CA Residents add 6% Sales Tax
2. Visa or MasterCard welcome.
3. COD adds additional $3. Cashier's check only
4. Free shipping for prepaid orders (Visa not included)
5. All products come with 6 months warranty.

SUPREME USA, INC.
6980 ARAGON CIRCLE #1
BUENA PARK, CA 90620
(714) 739-5250

DEALER AND OEM INQUIRIES WELCOME

(IBM is a trademark of IBM Co.) (SCOM & Hayes are trademarks of Hayes Microcomputer Inc.) (XTALK is a trademark of Microstuf.)

California, with a local network in Newport Beach and across continental USA. BBS offering private one-on-one tutoring to endusers. Leave msg. for sysop if not available—we return your message and try to assist you. 24 hrs, 7 days, 300/1200/2400. Sysop: Al Cobb.

CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 861-7268. 8-0-1, full duplex. 24 hours, 365 days. Sysop: Albert E. Ray, Ph.D.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

FBBS. (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

Bits and Pieces Times BPT-#. (714) 630-5619. 300/1200, No parity, full duplex. 9 pm-9 am. Sysop: John Callaci; sub Mike Dalton.

Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 42 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. Beta Tester for "Wildcat," the next generation of BBS software. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

717

The Dead Board (717) 677-9573, 24 hrs., 8 bit word, 1 stop bit, no parity, 300/1200 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

French Connection. (714) 858-8111. 300/1200/2400/9600 baud. Ten multi-line BBS in Orange County. Dating service, 500 megs of software for users. Sysop: Stephan M. Cohen.

The Pleasure Connection. (714) 773-5326. DYM 502 Buena Park CA. 300/1200 Baud, 24 hours. Computer dating, open forums, adult boards, etc. Sysop: Russ.

805

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

KERNCOM. (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

PC Vision. (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

Tech-Talk. (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

CompuLink Fido. (805) 494-3350, 300/1200/2400 baud, 24 ours except during netmail. Huge selection of ham radio files; other features include echomail, Outside, and role-playing games (StarTrek, Gamma World, Champions, AD&D, more!!). 20 megs—call today! Sysop: Eric Daymo.

Mustang WILDCAT! BBS. (805) 399-1887. Bakersfield, CA 300/1200/2400/9600 baud. 24 hours, 7 days. This board serves as the development home for the WILDCAT! Bulletin Board System written for the IBM PC. Free access to over 40 megs of download files on your first call. The message section supports conferences in Turbo Pascal, PC Utilities, WILDCAT! updates, electronic stock reports, and many others. Sysop: Jim Harrer.

Affection Connection. (805) 527-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

818

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases, large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

The Audiophile Network. A databoard system for the music lover and audiophile. Information, specifications, prices and the latest news about hi-end stereo components. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited! (818) 905-6262.

Ski Center West. 300 baud, full duplex. 50 ski resorts in western states. Bulletin board, E-mail, buy & sell equipment, merchant section, more. (818) 982-2530. Information (voice) (818) 982-3571.

Warren Communications Network. TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

The Hotline Featuring Computer Entertainer Online. (818) 766-6442. The source for Newsbytes, computer news, software reviews, online with Dan, zap mail, movie and music charts, general interest and more. Unique Databoard available to public. On-line adventure with password. 8-N-1, 1200/2400 baud, 24 hours. Affiliated with Computer Entertainer Network. Sysop: Jon Badeuax.

Party & News Line. Chat with other live users by modem! Read the latest computer news provided by BBS Press. Use your modem and call (818) 842-3322 now! 300 baud.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include emkployment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Light Artists, LTD. (818) 985-0541. 24 hrs, 300/1200/2400 baud. Sysops: Marty and Gerald Lehtola.

The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

The Dugout. (818) 248-0562. Operates at 300 baud on a TI-99/4A but welcomes all systems. Includes message base, computer events, on-line adventure, xmodem d/l, and more. 6pm-11pm daily. Sysop: Jim Edwards.

The Talk Channel. (818) 506-0620. 24 hours, 300/1200. Sysop: Gary Clarkson. A multi-user, multi-interest system featuring chat on-line with other users. 20 public message boards, including movie previews, casting calls, dining tips, debate and dating boards. 4 questionnaires, one that you answer in your own words, 3 optional. Extremely fast operation on 22 meg hard disk drives.

LAACE (Los Angeles Atari Computer Enthusiasts). (818) 348-8644. 24 hour, 300/1200 baud, 10 meg online.

The Californian. (818) 368-7497. 300 baud, 24 hours. Color Bulletin Board System runs 24 hours a day, 7 days a week. Dedicated to the TRS-80 Color Computer, but other computers welcome. 9 sub-boards, more soon. No fees; only rule—no attempts to crash the system. Sysop: Jay B. Sanders.

Wizard of Osz RBBS. (818) 709-6978. 300/1200/2400, 24 hrs., CP/M or MS-DOS. Sysop: Mat Satuloff.

Atari Resource Magazine (ARM) (818) 446-5813. 24 hrs., 300 / 1200. Currently serving Atari and IBM computer users. Eleven message bases: general chatter, hangouts, advertise, for sale, XE Atari, ST Atari, modem, ul/dl, other BBS #s, Bible, job board. Sysops: Bob and Kim Reynolds.

RBBS (Bondwell SIG). (818) 787-0156. 300/1200 baud, CP/M and MS-DOS, 24 hours, 7 days. Everyone welcome. No time limit. Instant access to downloads. Files available for PC compatibles,. Bondwell models 2 through 36. Hardware notes and tips. New product discussions. Sysop: Jon L. Bek.

Dodge City. (818) 241-4401. 24 hours, 300 baud, soon 1200. Great downloads that change every day. Sysop: The Sheriff.

The MacLodge BBS. (818) 444-9850. 8-N-1, 40 megs, 300/1200/2400. Hours M-F 3:30 pm-7 am; 24 hours on weekends and holidays. Macintosh up/downloads, plus Mac info. Mac users only please. Sysop: Dennis Cosio.

Greycastle BBS. (818) 796-5042. The bulletin board of the San Gabriel Valley Macintosh Users' Group. Operates 24 hours per day at 300 or 1200 baud. 5 megabytes available for 8 sub-boards, XModem file transfers on SnAPP software. Sysop: Bryan Menell, CompuServe ID 72307,2100, GEnie ID B.MENELL.

The Outpost RCP/M. (818) 353-8891, 300/1200 baud, 24 hours. Online games, occult and general text files, CP/M, Turbo Pascal. Sysop: Phil Hansford.

AT&T PC6300 Users' Group BBS. (818) 954-0530. 300/1200 baud, 8-N-1, 24 hours. Only So-Cal BBS "officially supported"

BAY AREA
Computer Swap

The Computer Bargain Show

FEATURING:

- Over 150 Exhibitors
- Millions in Merchandise
- Bargain Prices
- Door Prizes
- Major Brand Names
- Latest Clones and Compatibles

FANTASTIC SAVINGS ON:

- Personal Computer Systems
- Disk Drives
- Printers
- Modems
- Monitors
- Personal Software
- Word Processing Software
- Game Software
- Computer Furniture
- Hard Disks
- Add-on Memory
- Print Wheels
- Cables
- Printer Ribbons
- Educational Software
- Business Software
- Joysticks
- Computer Books
- Plug-in Boards

Saturday, June 13

SANTA CLARA COUNTY FAIRGROUNDS

Take Hwy. 101 to San Jose, Exit on Tully Road West to
344 TULLY ROAD, SAN JOSE

10 AM to 5 PM
Admission: $5.00 Children under 12 free

A MICROSHOWS PRODUCTION
For Further Information Call 415-340-9113

Price and Performance A Perfect Match

IBM XT Compatible

$495

FEATURES:

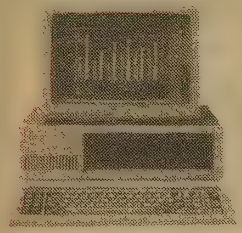
- XT Turbo, Dual Speed 4.77-8 Mhz
- 640K on Board, (1) 360K Drive
- Monochrome Card w/Printer Port
- IBM AT Style Keyboard
- Amber Monitor
- 6 Month Warranty

Computer Mart

Dealers Are Welcome
We Do Shipping & Delivery
Store Hours Mon-Fri: 9:30-6:30
Sat 10:00 to 6:00

833 Market Street, #622
S.F. CA 94103
(4th & Market)
(415) 546-0229

Great Deals From Computer Mart



IBM AT COMPATIBLE

0 Wait State, 6-8 Mhz, 1 Meg, 1.2 MB Drive, Keyboard, Western Digital Controller, Graphics Card & Monitor

COMPAQ

Compaq Deskpro, 2 Drives, 256K	1300
Compaq Portable	1525
Compaq Deskpro 286, 256K, 1 Drive	1999
Compaq 386	4600

MONITORS

Amdek	145
P.G.S. Max-12	155
P.G.S. HX-12	398
Samsung Monitor T.T.L.	85
Compaq Monitor	205
TVM Color Monitor	350
IBM Color Monitor	525
NEC Color Monitor	325
Thompson 14″ Monitor	299
Multisync EF	545

PRINTERS

Epson LQ800 / LQ1000	437/598
Epson LQ2500	923
Epson EX800/EX1000	394/518
Epson LX 86E	167
Epson FX 286E/86E	448/318
Citizen 120D	**Best Price**
Okidata 192+/193+	375/545
Toshiba P351/P321	979/489
HP Laser Printer/HP+	2150/2900
HP Laser Series II	1798
IBM Proprinter/XL	384/545
Citizen Premier 35	455

Dealers Are Welcome
We Do Shipping & Delivery
Store Hours Mon-Fri: 9:30-6:30
Sat 10:00 to 6:00

WE CARRY ALL NEW IBM PRODUCTS!

IBM

IBM XT 256K, 1 Drive **(New Model)**	1050
IBM AT 512K, 1.2 MB Drive	2250
IBM PC 256K, 1 Drive	999
IBM AT 339	3925

DISK DRIVES

Seagate 20 MB HD w/controller	345
Seagate 30 MB HD for AT	545
Seagate 30 MB 1/2 Ht w/Controller	399

HARDWARE

Hercules Monochrome Card	185
Hercules Color Card	155
Quadram EGA Card	299
AST I/0 Plus II	125
Zucker Monographics or Color	99
AST 6 Pak Plus Sidekick	165
Paradise Autoswitch	399
Vega Video 7	250

MODEMS

Hayes 1200B+ Smartcom II	345
Hayes 1200 (Ext)	379
Hayes 2400	589
Everex 1200 (Int)	125
Hayes Compatible (Ext.)	155

833 Market Street #622
S.F. CA 94103
(4th & Market)
(415) 546-0229

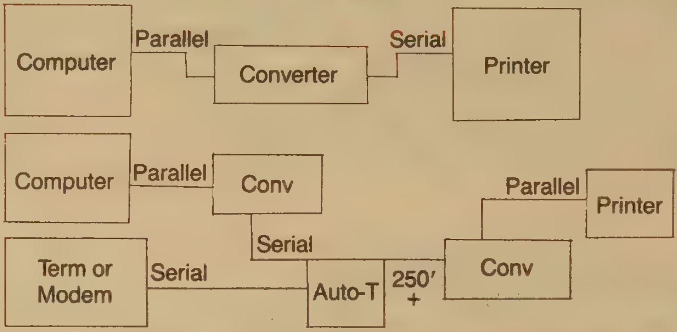
con • nec • tiv • i • ty, *n.*
- the condition of being connected.

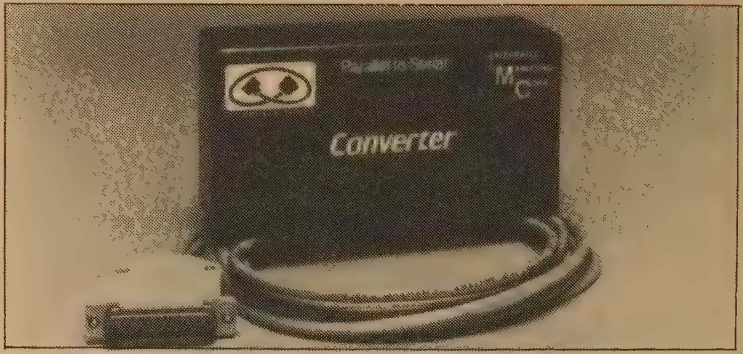
2 More "Interface Tools™" From "The Interface Specialist℠"

Parallel To Serial Serial To Parallel Converter

$79.95

Includes 10′ Cable





Increases Your Data Speed

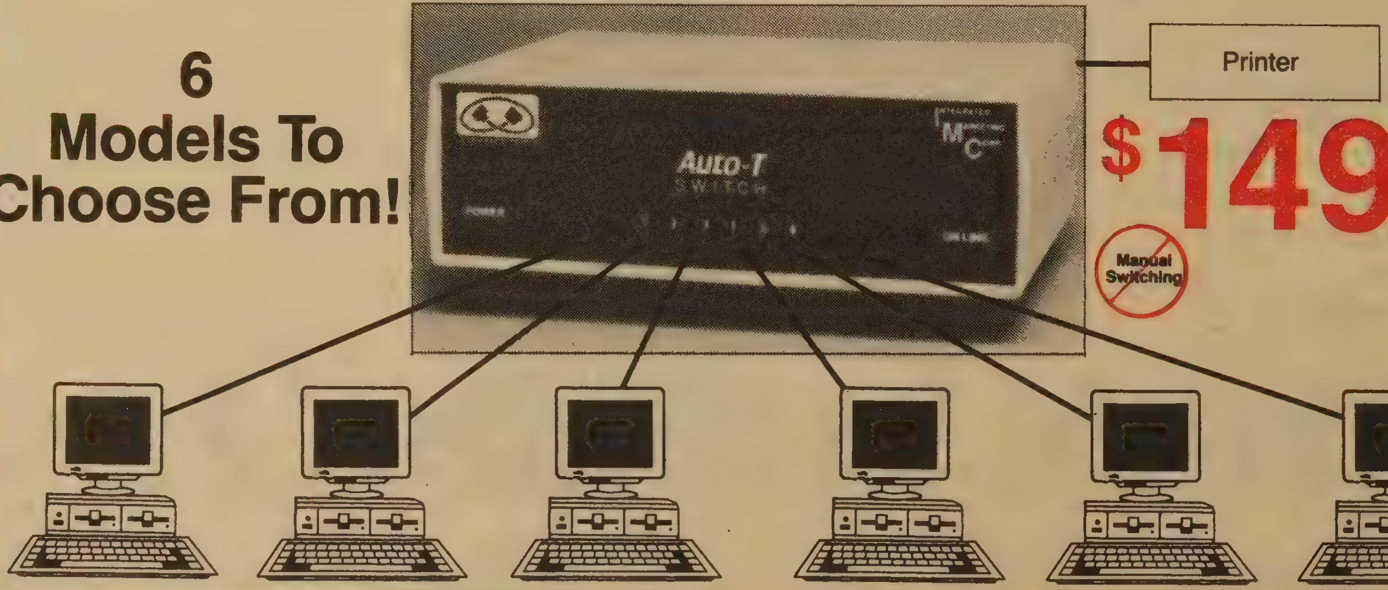
3 Reasons Why You Need Our Converter!

- To connect a parallel computer to a serial printer or a serial computer to a parallel printer
- Parallel printer can be 250′ or more from computer still using your parallel port
- Connect a parallel computer to a serial system of computers, printers & plotters

Connect From 3 To 6 Computers To The Same Printer Or Plotter

Auto-T Switch™ Peripheral Sharing Device

6 Models To Choose From!



$149.95 and up

Manual Switching

800-621-0854 ext 309

INTEGRATED MARKETING CORPORATION

Call For Dealer Nearest You
or OEM & Corporate Discounts

1031 E. Duane, Ste. H, Sunnyvale, CA 94086
(408) 730-1112 TELEX 5106018576

"The Interface Specialist"℠

INTERFACE TOOLS™

by AT&T. Sysop: Eric L. Levinson.

Infotronics Computers BBS. (818) 282-7094, 300/1200 baud, 10 am-7 pm Mon-Sat, Sunday 12-5. 20 meg online. Message bases and file transfers for Macintosh (or Atari ST with Mac emulator), IBM (or Atari ST with IBM emulator) and even the Atari ST computers! (All computers are welcome.) We need users! No fee and plenty of elbow room—give us a call. Running on MichTron BBS software for Atari ST.

The LEDGE. (818) 352-3620. Southern California's finest PC/AT compatible support network, running on Leading Edge-D. Features the latest downloads, and professional assistance with all MS-DOS formats, message bases, doors, public domain shareware, plus immediate on-line access available. 24 hours, 8-N-1, 1200/2400 baud only. Affiliated with Computer Entertainer Network. Sysop: Joseph Sheppard.

AMP PC-RBBS. (818) 570-4406. 300/1200, 8-N-1, 24 hours. For IBM, program downloads and uploads, personal mail, public message system, 40 megs, no fee. New open sale conference for free for sale or wanted ads. Computer products offered at low price. Sysop: Edward Lee.

Affection Connection. (805) 527-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

Excalibur BBS. (818) 355-6949. Atari and other computers. 24 hours, 7 days, 300/1200. Sysop: White Knight.

The Computer Tele-Comm System. (818) 362-0995. 24 hours, 300/1200 baud, 8-N-1. We have meeting places, computer supplies. You can apply for credit cards. Enter our contest to win a 20 meg HardCard, 100 diskettes, $50 solid gold piece and more. We are the first BBS to offer an 800 toll free number. Call us direct the first time, after that call us free. Sysop: Dr. Jeffrey A. Keese.

See-Your-Match. (818) 445-0691. 24 hours, 300/1200. Sysop: Mel Minami.

PC Users Group and BBS For Desktop Publishing. (818) 445-8072. 24 hours, 300/1200/2400 baud. Sysop: Mel Minami.

Fantasy Plaza BBS. (818) 840-8066, 300 baud, 24 hours, 7 days. Fantasy Plaza departs from reality with the most unique and entertaining system you've ever seen! You will be impressed! Sysop: Gregg Collins.

Dial-Your-Match #1. (818) 942-6900 24 hours, 7 days, 300/100 baud. Meet new friends! The original and most unique friendship BBS. Online since October 1981. DYM network allows you to send messages across the USA.

Machiavelli Interface. (818) 659-1168. 8-N-1, 24 hours, 7 days, 300/1200. IBM and compatible PC board with Net-Mail feature. 30+ megs of downloads, conferences. Sysop: Dewayne Mikkelson.

Luv-A-Hug Moonbeams B.B.S. (818) 772-0384. 300/1200 baud, 8 data bits, 1 stop bit, no parity. Full access restricted to members of Luv-A-Hug only. 25 Megabytes online. IBM compatible, Z-100, and CP/M public domain software. Sysop: Greg Cook.

Dial-Your-Match #1. (818) 842-6900. 300/1200 baud, 24 hours, 7 days a week. We're not just for dating! Come enjoy a BBS that is "different" in every way! Make new friends the fun way! Call Today! Sysop Gregg Collins.

The Multi-User Party Line. (818) 842-3322. A multi-user chat system dedicated to chatting with other callers. Meet new people in an enjoyable anonymous environment. 300 baud, 24 hours, 7 days a week. Sysop: Greg Collins.

Fantasy Plaza. (818) 840-8066. 24 hours, 7 days a week, 300 baud. An impressive experience where you will be treated to "red carpet" hospitality. A system that is not to be missed!

916

The Vortex BBS. (916) 481-0194. 24 hours, 300/1200 baud. Online and RPG games, new ones start often. Message boards include private mail, Dr. Who, game hints, endless story, play by mail. Vote on movies and weekly survey. Articles and BBS listings. No Fee. Register first call. Pamela Lunsford, sysop.

"The Meeting Place" BBS 300/1200/2400 baud. 24 hours, no parity. AE line for public domain downloads. Apple, Commodore, IBM programs available for download. Numerous general files. No fees, all free. Call (916) 662-1838. Woodland, CA.

Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles, etc. Christian TBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA), (201) 736-1859 (Newark, NJ), (813) 269-7957 (Okeechobee, FL).

SAC TIBBS. (916) 927-3012. 24 hrs, 300/ 1200 baud, Xmodem downloads, graphics, speech. Free. Sysop: Woody Large.

The Devil's Domain BBS. (916) 268-1127. 8-N-1, 24 hours, 300/1200/2400 baud. 4 sub-boards including main, music, jokes/war, and elite. Up/downloading. General files. Voting topics, online gaming. A BBS devoted to have fun! Sysop: Asmodeus.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton [illegible] 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

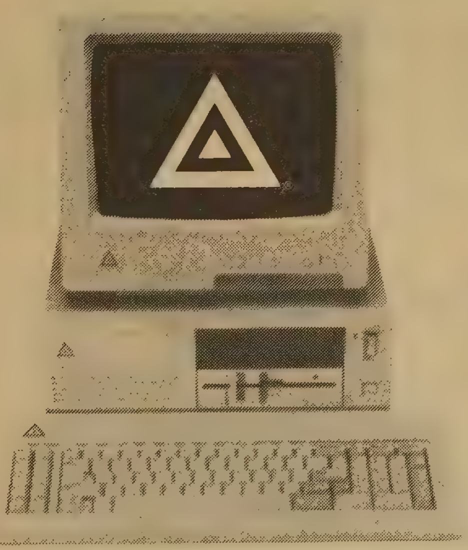
Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangelo Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings,



GRAND OPENING SALE

WE'RE YOUR DEALER ON THE PENINSULA!

DRIVE OPTIONS

1 Floppy System
(2) 360K 5¼″ Floppy Drives
Only $995 List $1170

2 Fixed Memory System
(1) 360K 5¼″ Floppy Drive
20 MB Hard Disk
Only $1295 List $1495

3 Unlimited Memory System
(1) 360K 5¼″ Floppy Drive
(1) 5½″ Removable 20 MB Cartridge Drive
(Infinite Memory System™ comes with 2 cartridges = 40 MB)
Only $1795 List $1995

Standard Leading Edge System
Authorized Sales & Service Center

ADDED VALUES & SAVINGS

ASK HOW

☐ Remove the color barrier from your monochrome monitor—call about our $100 monitor upgrade!

☐ You can get a FREE molded keyboard protector—a $29.95 value!

☐ Early Bird Special saves you an additional $100—ask how!

Leading Edge and logo are registered trademarks and Leading Edge Infinite Memory System is a trademark of Leading Edge Products, Inc.

MICROPOINT

112 EL CAMINO REAL SAN CARLOS CA 94070 (415) 591-7651

USED COMPUTERS

Buy from the FIRST in the Nation. Buy from the BEST in Experience

CALL FOR THE LOWEST PRICES ON:

APPLE IIE/IIC
MACINTOSH
IBM/COMPAQ
EPSON PRINTERS
DIABLO
TOSHIBA
AND MORE!

BUY • SELL • TRADE

JUNE SPECIAL
HP Laser Jet/Plus
$1325/$2195

"The oldest used computer store in the United States . . . buyers have found as much user support as could be expected at any retail computer store." Personal Computing, April '86

90 Day parts & labor

1415 El Camino Real
Mtn. View, CA 94040
(415) 968-6811

icb
INTERSTATE COMPUTER BANK

Complete AT Alike

XT Turbo 20 MB H.D.
Compatible System

- AT Jr slide in case w/keylock power & turbo mode indicator
- 640K on motherboard
- 4.77/8MHz 8 expansion slots
- 8088-2 processor
- 8087 math co-processor socket
- 150 Watt power supply
- AT style keyboard
- Floppy controller card w/cable
- Fujitsu 360K floppy disk drive
- 20 Meg Seagate hard disk
- Clock, calendar w/bat back up
- Serial port (2nd optional)
- 2 parallel ports & game port
- Hi-res mono graphic card
- Hi-res mono monitor w/swivel base (amber)

ONE YEAR WARRANTY (parts & labor)

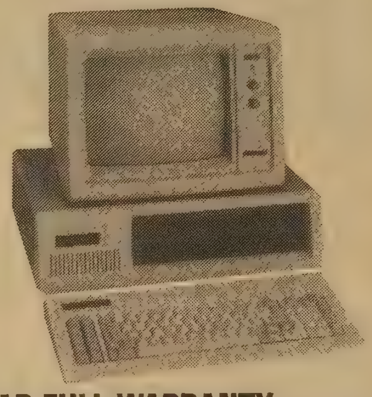
Only $949

Complete XT-turbo

Compatible System

- XT slide in case
- 640K motherboard 256K on board
- 4.77/8MHz 8 expansion slots
- 8088-2 processor
- 8087 math co-processor socket
- 150 Watt power supply
- AT style keyboard
- Floppy controller card w/cable
- Fujitsu floppy disk drive 360K
- Hi-res (720x348) mono graphic card
- Printer port
- Hi-res mono monitor w/swivel (amber)

Only $499



ONE YEAR FULL WARRANTY (parts & labor)

Dealers & Consultants Call For Dealer Prices • We Service & Repair IBM™ & Compatible Computers

DRIVES

360K floppy drive	$75
20 MB Seagate H.D. Kit	315
30 MB Seagate H.D. Kit	399

MONITORS

12″ amber monitor	$79
14″ EGA monitor	379

ADD ON CARDS

Monographic printer card	$45
Color graphic printer card	49
EGA card (EGA/CGA/HGA/MDA)	189
Multi I/O card	189
Modem 300/1200 internal	89
Modem 300/1200 external	119

ACCESSORIES

Citizen 120D printer	175
Printer cable	5
Gender changer	5
Power center w/surge protector	29
Data switch box	24
Diskette storage box	12
Enhanced keyboard	69

SPECIALISTS IN
DESKTOP COMPUTER GRAPHICS SYSTEMS

- Computer Aided Design and Drafting
- Desktop Publishing and Document Scanning
- Presentation Graphics Systems
- Computer Video Systems
- Large Screen Projectors

SYSTEM SALES AND GRAPHICS SERVICES

COMPUTER GRAPHICS CENTER, INC.
444 High Street, Palo Alto, CA 94301
Phone: 415-325-3111
(next to the Stanford Bookstore)

Mastercard and Visa accepted

Showroom hours:
Mon – Fri 10 to 6
Sat 10 to 5

200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving, All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

AstroSoft for the IBM PC. Promotes the use of software in astronomy; disseminates astronomical information. P.O. Box 4451, Hayward, CA 94540-4451. (415) 278-8458.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer Users. The purpose of this group is to gather information that will assist the blind or visually impaired person in utilizing the enromous potential of computers. It supports **Compu-Help**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Compuhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

28 Barbary Lane. Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

Microenvironmental Information Consortium For Researchers Overseas. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Washington phone: (206) 262-0159. California phone: (415) 524-9309. Micro on MCI mail, ECONET & WELL TELEX number 6502928733 via WUI.

ASSOCIATIONS

Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

Computer Professionals For Social Responsibility. P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets 7:30 pm alternate Wednesdays. Call (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-7:00 pm; call Sarah Collings, (415) 383-9631 for info.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine

BROTHER

H-R-20 – Daisywheel Printer	$359
Optioanl keyboard for HR-20	$225
HR-40 Daisywheel Printer, 40cps, 136 column,, 8K buffer, friction & rear tractor feed, parallel & serial interface	$749
M-1109 – 100cps, 25cps NLQ, 80 col. 2K buffer, dual interface	$219
M-1409 – 180cps (45cps NLQ), 110 column, friction & push tractor feed, Parallel	$369
M-1509 – similar to M-1409 but 132 column, parallel & serial	$425
M-1709 – 240cps (50cps NLQ), 132 column, unique form paper retract feature for easy insertion of cut sheet paper, parallel/serial	$499
2024L – 160cps, 24-pin head letter quality dot matrix printer, 136 col. w/tractor, parallel	$785
Twinriter-5 – Two heads are better than one! 160cps dot matrix and 36 cps daisywheel combined into one printer. Parallel interface	$899

Canon
LBP-8 A1
LASER BEAM PRINTER

- Prints eight pages per minute.
- 300 dots per inch resolution.
- 4 built-in fonts standard.

***Sale* $1,799**

CITIZEN

MSP-10 – 80 column	$289
MSP-15 – 132 column	$389
MSP-20 – 80 column	$339
MSP-25 – 132 column	$495
Premium 35 Daisywheel	$459

DIABLO

Diablo 635	$975
Diablo D80 IF	$1495

EPSON

Epson FX-85 – 160cps, 80 col.	$349
LX-86 – 120cps, 80 col	$215
FX-86E – 240cps, 80 column	$369
FX-286E – 240cps, 132 column	$525
EX-800 – 300cps, 80 col.	$449
EX-1000 – 300cps, 132 col.	$549
LQ-800 – 180cps, 24-pin, 80 col	$489
LQ-1000 – 180cps, 132 col	$689
LQ-2500 – 324cps, 132 col.	$999

HOMEWRITER 10
Dot matrix printer with near letter quality printing at a home budget price. 100cps draft speed, 80 column.
List $299 *Special* $159

FORTIS

Fortis DM-1310 – 130cps (33cps NLQ), 80 column	$245
Fortis DM-2010 – 200cps, 50cps NLQ, 80 colum, emulates Epson FX-286 and IBM graphics printer	$289
Fortis DM-2015 – Similar to DM-2010 but 130 column	$389
Fortis DM-20 – 160 cps dot matrix, 136 col., NLQ mode, both parallel and serial interfaces	$499
Fortis DX-25 – 25cps daisywheel, 132 column, 7K buffer, quiet operation, built-in parallel & serial	$399

GENICOM
High speed, heavy duty, 18-pin dot matrix printers for business use.

3404 – 400cps, serial interface	$1,495
3320	$2,495

HEWLETT PACKARD

H-P Thinkjet, 150 cps, 80 col.	$379
H-P Quietjet Plus, 132 col.	$599
H-P Laserjet	$1,695
H-P Laserjet Version 2	$1,795
H-P Laserjet 500	$3,450

EPSON

EQUITY I and Free Printer

FREE Epson Printer
List $299.00

- 640K memory
- Clock, serial, parallel
- MS-DOS & GW BASIC
- Epson monitor included
- Free Epson 100cps, 80 column printer
- 1 year warranty

(1) 360K drive system w/Free Printer	$799
(2) 360K drive system w/Free Printer	$999
360K & 20-MB system w/Free Printer	$1,150

HARD DISK SALE!
New Low Prices!

- Half height internal hard disks for IBM-PC, XT and Compatibles.
- Boots directly from had disk
- Low power consumption
  Complete with controller, manual, cables & mounting hardware

20–MB	30–MB
Seagate 225	Seagate 238
$359	$449

HARD DISK FOR IBM-AT & COMPATIBLES
High performance full height hard disks.

30-MB Seagate 4038	$599
40-MB Seagate 4051 Complete w/software	$695
82-MB Seagate 4096 Complete w/software	$1,095

EVEREX
EVER for Excellence

20–MB TEAC TAPE BACKUP

EVEREX 20-MB Internal Tape Back-Up for PC and XT, 4 MB/minute transfer rate. Complete w/control card, cable and manual	$575
EVEREX 60-MB Internal Tape Back-Up for AT. Complete with controller, cable and manual	$885
EVEREX 60-MB External Tape Back-Up for At.	$995

IRWIN TAPE BACKUP

Irwin 110, 10-MB Internal Unit	$269
Irwin 120, 20-MB Internal Unit	$379
Irwin 145, 40-MB Internal Unit	$450
Irwin 20-MB External for XT	$595
Irwin 20-MB External for AT	$659

HARD DISKCARD

Plus System 10-MB Hard Card	$595
Plus System 20-MB Hard Card	$695
Mountain 20-MB Hard Card	$599
Mountain 30-MB Hard Card	$699

IBM

IBM Proprinter-2, 240cps, 80 col	$Call
IBM Proprinter X24, above but 24-pin head, 4 resident fonts.	$Call
IBM Proprinter XL24, above but 132 column	$Call
Quiewriter-2,	Special $1,150
Quietwriter-3, 274cps	$Call

NEC

P-5 Printer, 132 colmn	$969
P5XL Color printe, 132 column	$1,085
P6 Printer, 216cps, 80 col	$499
P7 printer, 216cps, 132 column.	$699

OKIDATA

182P, 120 cps, 80 Col., Parallel	$259
192+ 160 cps, 80 col. Parallel	$389
193+160 cps, 136 col. Parallel.	$579
294, 400cps, 136 col	$1,050
2410P, 350 cps, 136 col. Paralle	$1,795

PANASONIC

KX-P1091i – 160 cps, 80 col	$299
KX-P1592 – 270cps, 132 col	$469
KX-P1595 – 360cps, 132 col	$630
KX-P3151 – 22cps daisywheel	$445

STAR GEMINI

SB-10, 24-pin, 80 column	$450

TOSHIBA

P321SL Model 2 – 24-pin head, built-in tractor	$535
P351 Model 2 – 288cps, 132 col.	$925

IOMEGA BERNOULLI BOX

10+10-MB	$1,850
20+20-MB	$2,400
Non-bootable interface card	$150
Bootable interface card.	$205

Fujitsu 360K drive	$99
Teac 55-B, 360K drive for PC, XT	$99
Panasonic Drive, 360K for PC, XT	$99
Toshiba 360K drive for PC, XT	$99

360K DRIVE FOR IBM-AT
$105 ea.

INTERFACE CARDS

Hercules Color Card	$145
Hercules Graphics Card	$189
Hercules Graphics-Plus Card	$199
Orchid EGA Color Card	$355
Orchid Turbo EGA Card	$579
Orchid Tiny Turbo 286 –	$485
Paradise Auto Switch EGA	$359
Quadram EGA+ Card	$365
Sigma EGA Color Card	$385
Vega EGA by Video-7	$365
Vega EGA Deluxe Card	$465
IBM Parallel & Serial Card for AT	$145
IBM Floppy Disk Controller	$97
IBM Asyn Card	$85
IBM Monochrome/printer card	$199
IBM Colorgraphic Card	$199
IBM Enhanced Color Card	$459
Enterprise EGA Color Card	$199
IRMA 3278/9 Emulator Card	$769
Taxan Gold Card	$385
Taxan EGA Color Card	$285
Taxan 555 Hi res. color card.	$225
Paradise Color/Mono Card	$199
Sigma 400H Color for PGS SR-12	$455
Sigma 400L Color for Taxan 440/630/640 monitors	$455
Everex The Edge	$275
Everex Graphic Edge	$295
Tecmar Graphic Master	$465
Tall Tree J-Diskette Controller to hook up 1.2-MB drives in PC/XT	$229
RS-232 Serial Card	$49

COLOR GRAPHICS CARD
Compatible with IBM Color Graphics card, w/parallel port . . . $85

MONO GRAPHICS CARD
Hercules compatible, with parallel port . . . $89

(Monitor Optional)

ENTERPRISE

ENTERPRISE XT-Plus (4.77–8 MHZ)

- Fully IBM PC/XT Compatible
- Full one-year Warranty
- 640K on mother board
- 150-watt power supply
- 8 Expansion Slots
- AT style Keyboard w/LED
- Parallel Port included
- Serial Port included
- Game port included
- Clock/Calendar w/battery
- Floppy Disk Controller
- Compatible w/EGA Color Card & Net working systems
- Made in U.S.A.

$415	$575	$949	$999
640K memory No Drive	2-360K drives	2-360K and 20-MB Drives	2-360K and 30-MB drives

(Monitor Optional)

ENTERPRISE 286

- 512K – expandable to 1-MB
- Fully IBM AT compatible
- 80286 6/8 MHz microprocessor
- Controller for Floppy & Hard Disks
- 1.2-MB Floppy Drive
- AT-styled keyboard w/LED
- Full 1-year warranty

8/6 MHz SYSTEM (mini chassis)	$995
8/6 MHz SYSTEM (regular chassis)	$1,050
10/6 MHz SYSTEM (1 wait state)	$1,095
10/6 MHz SYSTEM (0 wait state)	$1,195

Modem Sale!

AST Reach, 1200 baud internal, free SideKick & CrossTalk	*Special* $175
Everex 1200 baud Internal	$129
Hayes 1200B, internal w/software	$339
Hayes 1200, external, 1200 baud	$365
Hayes 2400, external 2400 baud	$579
Hayes 2400B Internal Modem	$529
Prometheus 1200 external	$289
Prometheus 1200B internal	$249
US Robotics 1200 baud Internal	$99
US Robotics 1200 baud Ext.	$119
US Robotics 2400 baud Internal	$195

300/1200 BAUD MODEM
Half size modem easily fit into desk top or portable PC. Hayes compatible.
5-yr. warranty. $125

DATASHIELD

Model 100, 6-plug surge & noise protector w/audio & Visual warning.	$65
PC-200, 200-watt backup power supply with built-in surge protector	$279
XT-300, above but 300-watt.	$365
Turbo-350, Super fast 350-watt.	$535
AT-500, above but 500-watt.	$625
AT-800, above but 800-watt.	$685

PLOTTER SALE

ROLAND

DXY-880, 8-pen A/B size	$995
DXY-880GP (H-P I/F)	$1,095
DXY-980, 8-pen	$1,295
DXY-885, 8-pen.	$1,295
DXY-990, 8-pen.	$1,695

HEWLETT PACKARD

7440A Color Pro – 8-pen	$975
7475A – 6-pen	$1,395
7550A – 8-pen	$2,995

POWER SUPPLY
The finest and quietest power supplies in the market. Built-in EMI filter and short circuit/overload protection. External switch for 115/230 volt AC input. Can connect 4 drives. 1 year warranty.

150-Watt for PC/XT	$69
200-Watt for AT	$109

UNINTERRUPTIBLE POWER SUPPLY
Instant battery back-up system guards against black-out, brown-out and voltage surges. Back-up time 5–20 minutes with audio and visual warnings. Compact design. Special prices.

400-watt . . . . . $350 | 250-watt $225

IBM
XT/AT/System-2
CALL FOR SALE PRICES

COMPAQ

Portable 2, 256K, 2 drives	$Call
Portable 2, 640K, 20-MB.	$Call
Portable 3, 640K, 1.2-MB	$Call
Portable 3, 1.2-MB & 20-MB.	$Call
Portable 3, 1.2-MB & 40-MB.	$Call
Despro 256K, 2 drives	$1,295
Despro 286 8-MHz, 256K, 1 drive	$Call
Despro 286 12-MHz, 256K, 1 drive	$Call
Despro 386, 1.2-MB & 40-MB	$Call
Despro 386, 1.2-MB & 70-MB	$Call
Despro 386, 1.2-MB & 130-MB	$Call

AT&T 6300 COMPUTER

640K memory, 1 floppy drive, serial & parallel ports, clock, Monochrome and RGB color ports, keyboard	$1,395
Above with two 360K drives	$1,495
640K memory, 1 floppy drive, 20-MB hard disk, serial, parallel ports, clock, mono & RGB ports, keyboard.	$2,395

MONITOR SALE

★★★★ RGB COLOR ★★★★

PGS HX12, 12″ RGB color	$425
PGS HX-12E EGA Monitor	$499
PGS SR-12 – Super RGB Color	$595
PGS SR-12P Color Monitor	$695
IBM-8512, 14″ RGB monitor	$Call
IBM-8513, 12″ EGA monitor	$Call
IBM-8514, 16″ PGA monitor	$Call
IBM RGB Color Monitor.	$545
IBM Enhanced RGB Monitor	$689
MultiTech 14″ EGA monitor	$425
Mitsubishi XC-1410C, 14″ EGA Color. Similar to Compaq EGA	$485
NEC Multi-sync RGB monitor	-$599
Quimax PX-IV – 13″ RGB, 720x240 line. Has green switch, tilt & swivel base	$445
SONY KV-1311CR – RGB Color Monitor, 680-line resolution, also a Trinitron Color TV with remote control . . . *A Fantastic Buy*	$495
SONY SPD1302, 13″ EGA Multisyn monitor w/900-line resolution	$625
Tatung 1360 – 13″ RGB monitor	$355
Tatung 1380 – 13″ EGA monitor	$399
Taxan 720 RGB Monitor.	$379
Taxan 635 RGB Monitor.	$449
Taxan 650 RGB Monitor.	$515
Taxan 760 EGA Monitor.	$525
Taxan 770 Multisyn monitor	$575
Thompson 14″ RGB Color monitor w/ green & amber switch.	$325

★★★ GREEN SCREEN ★★★

IBM Monochrome, 12″, 720-dot	$255
Quimax DM-14G – 13″ green TTL, 750x350 resolution, titlt & swivel base included. 1 yr. warranty	$155
Samsung 12″ TTL green monitor.	$95
Samsung SF39A7, 12″ flat screen TTL Green monitor w/swivel base	$105
Taxan 121, 12″ green, 1000x360 dots, TTL monochrome	$145

★★★ AMBER SCREEN ★★★

Amdek 310A, 12″ amber	$169
Princeton MAX-12, 12″ amber.	$169
Quimax DM-14A – 13″ amber TTL, 750x350 resolution. Tilt & swivel base included. 1 yr warranty.	$159
Sansung 12″ TTL amber monitor.	$99
Samsung SM12SFLAA7, 12″ flat screen TTL Amber monitor w/base.	$109
Taxan 122, 12″ amber, 1000x360 dots, TTL monochrome	$149

★☆★ BLACK & WHITE ★☆★

IBM-8503 – 12″ B/W with base	$Call
Roland MB-142, 14″ reversible black & white TTL monochrome monitor w/ super hi res. 720x350 dots	$269

TOSHIBA LAP-TOP

T1100-PLUS – Two 720K drives, LCD screen, battery operated	$$Call
T3100 – One 720K drive, 10-MB hard disk, 640K, amber plasma screen. It is a lap-top AT. 115 volt AC.	$$Call
Toshiba 5¼″ external drive for 1100+ and 3100 only	$445
Toshiba 3½″ internal drive for PC	$199
Toshiba Modem 1200B for lap-tp	$385

ITT EXTRA/286
10-MHz AT compatible, 640K, 1.2-MB drive also read & write 360K format. 8 expansion slots. Complete with EGA & keyboard $1,795

ITT amber or green monitor $175

Canon (((PC)))
PERSONAL COPIERS

PC-10 Copier – Manual feed, compact size	($795) $479
PC-20 Copier – 100-sheet feeder, 1-19 copies.	($1,095) $649
PC-25 Copier – Make copies up to legal size from original as big as 10x 14. Enlarge 120%, reduce 67% or 78%.	($1,395) $799
Black toner/drum cartridge	$75
Blue, brown, red cartridge	$80

POWER DISTRIBUTOR
A power center with surge protector, noise EMI filter. 5 lighted rocker switches and a master switch. Built-in tilt & swivel monitor base. UL listed.
Super special $69

POWER SUPERVISOR
A power center with surge protector & noise EMI filter. It allows fingertip control of 5 different devices. UL approved.
Special . . . $59

The POWER DIRECTORS

P-22 – A unique control center & surge protector w/4 lighted and a master switches for computer, printer and accessories. It also filters out EMI & RFI interferences	$79
P-2 – like P-22 but w/5 switches	$109
P-12 – Has 6 switches & clock	$149

All goods are brand new and guaranteed. All advertised prices already include a 2% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 2% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges: 3% (Min. $3) of total order value by UPS ground, 5% (Min. $5) by UPS Blue & Parcel Post. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

IBM PC, XT, AT are registered trademarks of International Business Machines Corp.

EASTERN ENTERPRISES, INC.
Mass Merchandising Since 1969
6001 BANDINI BLVD., LOS ANGELES, CA 90040
COME VISIT OUR GIGANTIC SHOWROOM & STORE

VISA
MasterCard
AMERICAN EXPRESS

TOLL–FREE (ORDERS ONLY) **(800)392-7081**
Hours: Monday to Friday 8:30am – 5:00pm Pacific Time
Calif., Alaska & all info *Call* **(213)725-3080**
TELEX: 283195 FAX: (213)838-5301

CRESCENT COM INC.
GRAND SERVICE • BRAND PRODUCTS • BEST PRICES

NETWORKING/MULTIUSER/CAD/CUSTOMIZED SYSTEMS AND DESKTOP PUBLISHING AVAILABLE
Free Pre-Purchase evaluation of computer Hardware & Software

AT 386 w/1 MB Base System	.2575
Mini AT 286 w/1MB Base	.999

COMPAQ
Desk 286 640K+(12MHz)
Free Software 20 MB Full Mono
Sys.=**2898**

Desk 386 Full Mono Sys	.5250
Portable II Model 4	.3600

LAPTOPS

Nec Multispeed	.1425
Toshiba 1100+ w/Tilt Screen	.1615
Toshiba 3100	.2795
Zenith	.CALL

IBM

AT 339 Full Mono Sys	.3575
AT 20 MB Full Mono Sys.	.2850
XT 20 MB Full Mono Sys.	.1650

AST PREMIUM 286
512 K 20 MB

Full Mono Sys	.1999

MIRACLE OFFICE AUTOMATION PLEASE CALL

10MHz Compatible XT Mono System	.799

SAMSUNG AT 286
1.2 MF+1MB+20MB
Full Mono Sys=**1799**

COMPATIBLES

Portable 8 MH 2 Drive With DOS 3.1	.925
Desktop 640K Full Mono Sys +	.699

Above Systems are FCC Approved, 1 Year Warranty

MONITORS

Amdek 310-A	.$130
Quimax Am/Gr	.135
Samsung EGA	.360
NEC Multisync+VegaDel	.875
PGS HX12/HX12 (E)	.400/475
IBM Mono/Color	.213/530
PGS Max 12	.147
Sony Multiscan w/Cable	.650
Casper/Samsung Am	.99/85
Nanao Cl/B&W/Am	.370/140/138

MISC

Chips 64/256/128K	.CALL
Surge Protector	.16
Verbatim DS/DD (Box of 12)	.19
Xidex Precision (Box of 10)	.10
Maxell DS/DD	.13
Dysan DS/DD	.19
Sony DS/HD for AT	.40
Xidex-Precison Box of 10	.7
Printer Stand	.19
Sony 3.5 Diskettes (15)	.37

HARDWARE

EGA Wonder ATI	.299
Digitizer Plotters	.CALL
Orchid Products	.CALL
AST Adv. Board 128K	.342
Everex 1200B/2400B	.110/249
Paradise EGA Auto Sw/480	.360/399
IBM Mono/Color Crd	.207/213
Hercules Mono Card+	.199
Genoa Spect. Clr/Mono	.199
Video 7 Vega Deluxe	.350
NEC GBI EGA	.360
Other Boards	.CALL

SERVICE CONTRACTS AVAILABLE
CALL FOR PRODUCTS NOT LISTED
Prices reflect a cash discount

PRINTERS

Panasonic/NEC/Cannon	.CALL
HP LASER Jet Ser. 2	Best Price
OKI Laser	.Best Price
Okidata All Models	.Best Price
Epson 286E/85	.525/375
Toshiba 321P/351P	.CALL
Citizen MSP20/25	.350/500
Citizen MSP 10/15/120D	.325/410/195
Star All Models	.Best Price

SOFTWARE

Word Perfect 4.2	.$235
MS DOS 3.2 w/GW Basic	.80
IBM DOS 3.1/3.2	.70/80
Wordstar 2000+/Network	.337/399
Wordstar Pro Release 4/Network	.275/337
IUS Acctng. Pkg. GL/AP/AR	.CALL
IUS Super Project	.CALL
Flight Simulator	.38
Supercalc 3/4	.CALL
dBase III/Plus	.400
Computer Games	.CALL
Marketpro Real Mkt. simulator	.47

DISK DRIVES/HARD DISKS

1/2 Ht Floppy Fujitsu	.80
1/2 Ht Toshiba/Teac	.80/99
1/2 Ht Toshiba 3½"	.130
Hard Disk 20MB	.358
Hard Disk 30/40MB	.570/700
Miniscribe 40MB w/soft	.699
30 MB On Card	.500

Free in-store installation of products
PRICES SUBJECT TO CHANGE WITHOUT NOTICE & AVAILABILITY OF STOCK ON HAND

690 Market St.
San Francisco
(415) 362-7120

3531/3533 Ryder St.
Santa Clara, CA 95051
(408) 738-2480

M-F 9-6
SAT. 10-5

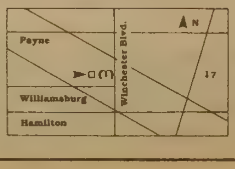
XT TURBO SYSTEM
$595
640K • 2 Floppy Drives • Mono Monitor • Monographic Printer Card • AT Style Keyboard 4.77/8MHz

• CGA/EGA Card	$45/175
• XT Multi I/O Card	$65
• 360K Fujitsu/Teac Drive	$75/85
• CTX RGB/EGA Monitor	$259/370
• Monographic/Printer Card	$49
• 150W Power Supply	$45
• XT (AT Type) K.B./Switchable/Enhanced	$54/59/69
• XT Case	$30

HARD DISK SPECIAL
Seagate 20MB/ WD Controller
$299
With any Purchase
Seagate 30MB/ WD Controller
$349
With Any Purchase

LYTEC SYSTEMS, INC.
3123 Williamsburg Dr., San Jose, Ca. 95117
(Off Winchester, behind McDonalds)

(408) 866-1738
Store Hours
Mon-Sat 12-6



controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564. Berkeley branch meets 6:30 pm, last Wednesday of the month, Claremont Branch, Berkeley Library, Ashby and Benvenue. Contact Soren Knudson, (415) 843-2344. Sunnyvale Pongbotics meets in Sunnyvale on the De Anza College campus, Room 22, first three Wednesdays of the month, 7:30 pm. Contact Bill Lee, (408) 281-2252.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call (408) 374-8090 for recorded message on next meeting's topic.

MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call W.R. Shepard, (415) 989-5441 for information.

Hebrew Users Group., Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793 (Berkeley Hillel).

Gay/Lesbian PC Users Group. We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are $15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Official group supported by AT&T. Meeting time and location vary. Contact Victor A. Borromeo, 764 St. Francis Blvd., Daly City, CA 94015. (415) 477-8124 days, (415) 991-4164 eves/weekends, or Maurice Aranda, (415) 972-5436 for information. BBS (415) 652-8277, 1200/2400, 8-N-1, 24 hours, 7 days.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejooh, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment, the Amiga User's Group of Silicon Valley. P.O. Box 1863, Fremont, CA 94538-0186. Contact: Jim Thomas. Information line: (415) 651-1160. BBS: (415) 659-9169. Meetings every second Friday at Hewlett-Packard, 5301 Stevens Creek Blvd., Cupertino.

Amiga Addicts Anonymous. Meets the third Monday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. For more into, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

AUM-Amiga Users of Marin. Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

SPCA (Society For The Prevention of Cruelty To Apples) Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize hard / software, demonstrations, lectures, discussions, $20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just $12 yearly membership. C'mon out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 94551. (916) 723-6422.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: 220 Redwood Highway 184, Mill Valley, CA 94941. On Apex and Draconet BBSs.

Apple East Bay Users meets the last Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

TVAUG-Tri Valley Apple User's Group. Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special beginners group meets on the second Thursday of each month. For more info, contact Dan Balsley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Mike Randis, 3602 Dumbarton St., Concord, CA 94519, (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. $2.00 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues $24.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddingtown Meeting Room, 1100-B Coddingtown Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and cooperation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD

AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 485-0958 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL

Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI

Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON

Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board

GOLDEN GATE SHOWS & MICROTIMES
PRESENT
THE FOLLOWING

COMPUTER
SHOWS & SALES

5/30 Santa Rosa Computer Show and Sale
Sonoma County Fairgrounds
Take Hwy 12 to Sonoma Exit

6/6 Sacramento Computer Show and Sale
Cal Expo-Building C
Take Business 80 to Exposition Blvd.

6/13 One Day Only
Oakland Computer Show and Sale
Oakland Coliseum-Exhibit Hall
Take Hwy 880 to Hegenberger Exit

6/20 San Francisco Computer Show and Sale
The Concourse
Corner of 7th & Brannan St.

6/27 Santa Clara Computer Show and Sale
Santa Clara Convention Center
5001 Great America Parkway

TREMENDOUS
SAVINGS

NEW PRODUCTS
CLOSE OUTS
OVER STOCKED
HARDWARE
SOFTWARE
BARGAIN PRICES
MAJOR BRAND NAMES

COMPATIBLES AND CLONES
DISCOUNTERS
PERIPHERALS
WHOLESALERS
ALL UNDER ONE ROOF!
SAVE!

ALL SHOWS 10-5PM

Admission $5.00
Kids 12 & under FREE

GOLDEN GATE SHOWS
CALL FOR INFO: (415) 388-8893

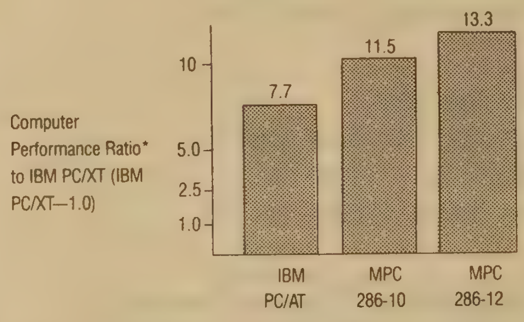
REGENERATE YOUR AUTOCAD DRAWINGS IN HALF THE TIME OR LESS

• Nozzle drawings-	7	Seconds
• Columbia-	4	Seconds
• Isomech-	3	Seconds
• Highway-	2	Seconds
• Counter-	4	Seconds
• Stair-	3	Seconds

WE DON'T THINK YOUR PERFORMANCE SHOULD BE LIMITED BY THE 'STANDARD'

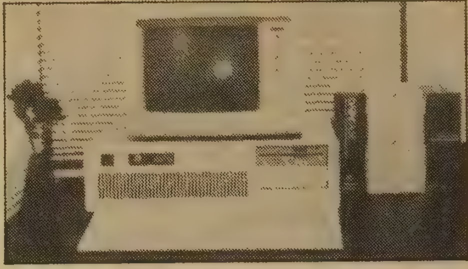
Today computer manufacturers are so preoccupied with meeting the "standards," they overlooked the opportunity to go beyond the "standards."

PC-TECH's MPC (Multi Purpose Computer) 286-10 6/10 Mhz AT Compatible with lots of horse power under the hood. The MPC-286-10 is powered by Intel's 80286-10 Processor with 0/1 wait state and a socket for 80287-10 Math Co-Processor, when compared to IBM AT or Compaq 286 the MPC-286 system generates your CAD drawing in half the time.



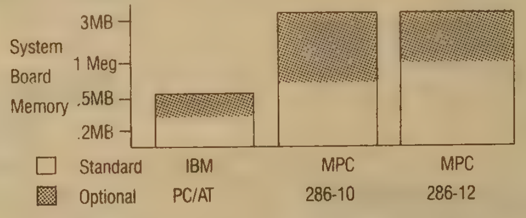
*Based on the Norton Utility SI-System Information Command

Option I/0 device. Most companies charge more for them. PC-TECH believes a CAD workstation needs at least 4 serial ports and 1 parallel port for printer, plotter, modem, and digitizer. So we designed 4 serial and 1 parallel ports on the CPU. MPC-286 CPU has only 36 chip against IBM's 131 chip, which generates less heat, greater reliability and years of trouble free performance.



	IBM PC AT 8 MHZ	MPC-286 10MHz	MPC-286 12 MHz
8		DOS 3.1	DOS 3.1
7		0/1 Wait State	0/1 Wait State
6	512K RAM	512K RAM	1024K RAM
5	1 Lpt Port	1 Lpt Port	1 Lpt Port
4	1 Serial Port	4 Serial Port	4 Serial Ports
3	30Mb Hard Disk (39NS)	30 MB Hard Disk (39NS)	32 MB Hard Disk (28NS)
2	Clock/Calendar w/Battery	Clock/Calendar w/Battery	Clock/Calendar w/Battery
1	1 2 MB Floppy Drive	1.2 MB Floppy Drive	1.2 MB Floppy Drive
	$4895	$1995	$2295

MPC-286 (Multi Purpose Computer) comes in three different models as turnkey CAD workstation. It's based on Autocad (The industry premiere CAD software) MPC-286 PRO, MPC-286 EGA, and MPC-286 Mono. Each station is based with MPC-286-10 AT Compatible computer, 80287 math chip. 4 serial, 1 parallel port, clock/calendar and 1024k on the CPU, a 1.2 mb floppy drive, 32 mb hard disk w/28 ms access time and 101 key keytronics keyboard w/12 function keys. One year warranty parts & labor.



PC-TECH can Configure your CAD workstation to your specific need. We carry plotters, Monitors, Printers, Modems and much more!

DEALER INQUIRIES WELCOME

IT'S TIME YOU KNEW

PC TECH

Penguin Computer Technologies Inc.

(408) 435-9550 • 712 Charcot Avenue • San Jose • CA • 95131

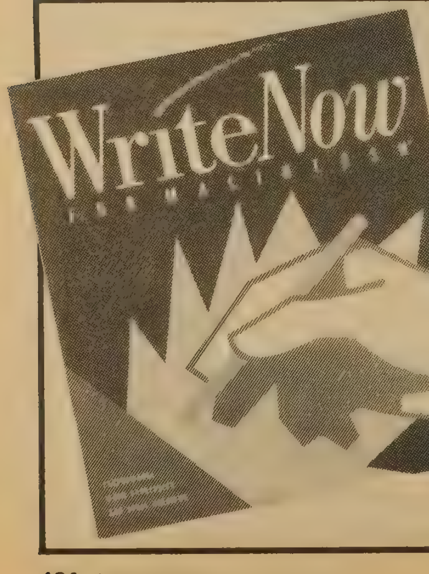
All prices reflect Manufacturers Suggested List Price for Base Model as of August 1986.

WARRANTY WORK DONE BY COMPUSHIELD. NATIONWIDE. ON SITE ALSO AVAILABLE.

CompuShield

30 Day Moneyback Guarantee

CALL FOR OUR FREE CATALOG



WriteNow

Word Processing You Can Feel At Home With

Recommended By John Dvorak
SF Chronicle April 19, 1987

- Designed to use a variety of typefaces
- Will print every point size 1-80

$89.95
Orig $175

Charter Members Only

Software For Le$$
Taraval & 20th Avenue
(just off 19th Ave.)
San Francisco, CA
(415) 753-1066

SFL

using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

COMMODORE

San Francisco Commodore Users Group PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Meeting time and place--call for details: Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection User Group. (CCUG) Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxely, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. For users of Commodore 64, 128, and Amiga computers. We have software/hardware reviews and demos, plus open discussion time. We have over 90 disks in our library. Bring $2 to help pay for the meeting place. Group meets every third Wednesday at 7:45 at 5445 Central Ave., Newark. For more info and a map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

64/MORE. Commodore User Group. P.O. Box 26811, San Jose, CA 95159. BBS (408) 225-2295, 300 baud, punter protocol, 24 hours. Sysop: Steve Nichols.

COMPAQ

SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

COMPUPRO

Bout Time, By God CompuPro user group forming in San Francisco. Call (415) 665-4733 or write to Barry Hermanson, 1509 5th Ave., San Francisco, CA 94122 for information.

CROMEMCO

Silicon Valley Cromemco Users Meets 3rd Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Emily Ott at (415) 854-5818 for details.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DYNABYTE

Dynabyte Announcing M.A.D., Mutual Assistance, Dynabyters (Dinosaurians?) For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group—ECUG. Meets 2nd Mondays, 7 pm, 6132—66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

EPSON

Bay Area Epson Salts 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Heath/Zenith computers, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Thursday. Contact John Lindquist, 642 Hollenbeck Ave. #1, Sunnyvale, CA 94087.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

HP Portable People user group to be formed. Contact Michael Felsenstein, 2366 40th Ave., San Francisco, CA 94116, (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Anyone interested in PCs and/or compatibles is welcome. Meetings at Yulupa School, 2250 Mesquite Dr., Santa Rosa, CA, 4th Thursday of the month, 7 pm. Contact Michael Adams, P.O. Box 5055, Santa Rosa, CA 95402, (707) 664-8320, (707) 546-3619.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holidome, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC Jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at 5445 Central Ave., Suite 1, Newark, at 7:45 pm. We have software/hardware reviews and visits from manufacturers. Our library contains over 250 disks of public domain software. Bring $2 to help pay for meeting place. For more info send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. An IBM PC and compatible for beginning to advanced users, programmers and decision makers. Meetings 3rd Thursday, 7 pm, 1555 Soquel Dr., Santa Cruz (Dominican Education Center). Call Daniel Payne, (408) 476-0203.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Fran-

Your Source for Reliable
Computers & Peripherals
Since 1983

Visit Us At Our New Location and Comdex/Spring '87

★★★★★★★★★★★★★★★★★★★★★★

SPECIAL

6151 KEYBOARD, A/B SWITCH BOX, and KEYBOARD DRAWER 10% OFF WITH THIS AD.

★★★★★★★★★★★★★★★★★★★★★★

SYSTEMS

Portable 386 System	Call
Portable 286 System	from $1375
• 1.2 MB floppy drive • 9″ dual freq. monitor w/graphic card • 512K memory (expandable to 1MB) • Options: 12/10/8/6 MHz Clock Speed-2nd Floppy and Hard Drive	
Portable Turbo XT System	$925
• Two 360K Floppy Drives • 9″ dual freq. monitor w/graphic card • 640K memory and 7 slots • 8/4.77 MHz switchable clock speed • Options: 44/30/20 MB Hard Drive	
AT Basic System	from $875
• 512K memory (expandable to 1MB) • 1.2 MB Floppy Drive • 200W Power Supply • AT Keyboard • Options: 12/10/8/6 MHz Clock Speed	
Turbo XT Complete System	$645
• TTL Hi-Res Monitor w/graphic card • 640K memory • Two 360K floppy drives • 8/4.77 MHz switchable clock speed • AT/XT switchable keyboard	

ADD $199 FOR ALL COLOR UPGRADING

MONITORS

14″ Amber monitor w/swivel base (made by SONY)	$120
Samsung Hi-Res 12″ monitor	$85
RGB 14″ monitor	$285
EGA monitors	from $385

POWER SUPPLY

150W	$55
200W	$95

KEYBOARDS

6151 XT/AT Enhanced Style	
with CLICK sound	$75
without CLICK sound	$65
5160 XT/AT (big ENTER key)	$55
5160 XT/AT (CLICK sound)	$59
5150 XT	$45

ACCESSORIES

AT case	$69
XT case	$30
Portable XT/AT case	$475/$525
Keyboard Drawer (wood)	$39
A/B data switch box	$25
Hard disk enclosure	$99
Self-folding printer stand	$39

DISK DRIVES

FUJITSU 360K floppy	$78
TEAC 360K floppy	$89
1.2MB floppy	$120
20MB hard disk w/controller	$349
30MB hard disk w/controller	$425
ST-4038/ST-251	$550/$645
44MB (half height, 28ms)	$750

BOARDS AND ADD-ON CARDS

12/10/6 MHz AT system board	$459
10/6 MHz AT system board	$425
8/6MHz AT system board	$385
4 layer turbo XT system board	$120
2 layer turbo XT system board	$90
Multi I/O card (2S, 1P, Game, Clock, Floppy controller)	$69
AT I/O card (2S, 1P)	$59
I/O Plus II board	$59
Floppy disk controller	$29
Hard disk controller	$89
AT hard/floppy controller	$175
Mono/Graphic/Printer adapter	$55
Color/Graphic adapter	$52
Auto-Switchable EGA card (640x480, EGA/HGA/MDA/CGA)	$275

*Dealer Pricing &
Quantity Pricing Available

STORAGE SYSTEM
ENGINEERING SERVICE

our new address: 3350 Scott Blvd.,
Building 19, Suite 1902 (near Bowers Ave.)
Santa Clara, CA 95054
(408) 727-6040
FAX 727-6042

HOURS:
10 am-6:30 pm
Mon-Sat

*Prices Good through June 15, 1987

Offer good until June 15, 1987 with this coupon

MOVING SALE

10% OFF ON ANY RIBBON PURCHASE

Discount applies to retail price on new ribbons only.

Replacement Ribbons For: Epson Okidata Toshiba Qume NEC Diablo Citizen Call for other models!

Come see our NEW location in Oakland!

American Ink Products
630 E. 10th Street Oakland, CA 94606 (415) 268-0825

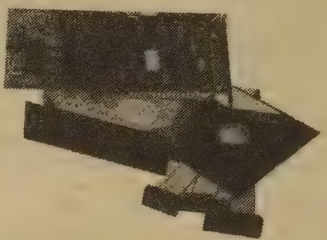
SEAGATE HARD DISKS

FREE FORMATTING !!

FULL YEAR WARRANTY !!

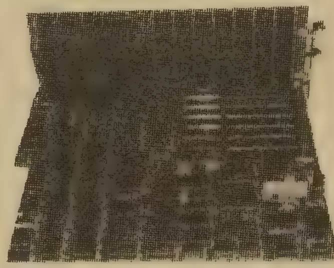
LOWEST RATE
WE SPECIALIZE EXCLUSIVELY
IN UPGRADING & REPAIRING
YOUR IBM PC/XT/AT
COMPAQ & OTHER COMPATIBLES

	REG	SALE
20MB TANDON ½HT *(3½" Good for portable)*	*$CALL*	***$CALL***
20MB SEAGATE ½HT 65 Ms ST225	$329	**$279**
30MB SEAGATE ½HT 65 Ms ST238	$349	**$295**
20MB SEAGATE FULL HT 40Ms ST4026	$579	**$489**
30MB SEAGATE FULL HT 40Ms ST4038	$595	**$539**
40MB SEAGATE FULL HT 40Ms ST4051	$749	**$639**
40MB SEAGATE ½HT 40Ms ST251	$749	**$629**
*80MB SEAGATE FULL HT 28Ms ST4096	$1095	**$890**
40MB FUJITSU ½HT 3½" 28Ms (Good for portable)	$749	**$639**
*140MB FUJITSU FULL HT 25Ms	$2095	**$1695**
60MB TAPE BACK UP KIT	$799	**$599**
Ext. Case with Built-In Power Supply	$99	**$89**
W.D., DTC Controllers for PC/XT/AT & Compatiable, etc.		***$SAVE***

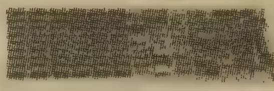


Fast 8028610 for PC/XT CPU Speeds of 10MHZ **$299.95** Reg. 399.95

Our good prices get you to buy, but our service and technical expertise will keep you coming back !!!



★ 386 ★	REG	SALE
*386 M.B. 16MHZ SI = 18 +	$1995	**$1795**
286 MB MINI 6/10 MHZ 0K SI = 11.5	$599	**$439**
286 MB 6/10 MHZ 0K	$579	**$425**
TURBO XT MB 4.77/8 MHZ	$115	**$89**
Mono Graphic Board *With* Printer Port	$95	**$65**
DIO For PC/XT/AT	$95	**$69**
150W Power Supply UL & FCC	$75	**$55**
200W Power Supply UL & FCC	$95	**$79**
AT Multifunction Card	$155	**$129**
5060 Keyboard For PC/XT/AT	$79	**$59**
5339 Keyboard For PC/XT/AT	$129	**$79**
W.D. AT Floppy/Hard Drive Controller & Cables	$170	**$159**
W.D. RLL Controller & Cables	$139	**$109**
W.D. Fast Drive Controller & Cables For PC/XT	$139	**$109**



	REG	SALE
VENTURA (XEROX) Desk Top Publisher	$795	**$585**
PARADISE EGA	$225	**$185**
PARADISE EGA Autoswitch 640x480	$399	**$349**
NEC Multisync Monitor 800x560	$650	**$545**
NEC EGA Board GB-1 W/DR HALO II	$399	**$349**
Hayes Compatible 1200 Baud Modem Made in USA, 5 years warranty	$149	**$108**
CASPER RGB Color Monitor	$365	**$269**
Quimax DM-14" AMBER Monitor	$169	**$133**
Logimouse Plus	$119	**$79**
Printer Cable 6′	$12	**$7.95**
Power Surge with 6 Outlets	$22	**$9.95**
Diskette Storage with Lock	$9	**$4.95**
PC DOS 3.1/3.2	$80/85	$69/75
MS DOS 3.2W/GW BASIC	$85	**$69**

64K, 256K CHIPS, 8087, 80287 CHIPS, Switch Boxes, Printers, Floppy Disk Drives, etc.
More! More! More!

BEST PC SUPPLY
415/875-6888
1203 GRANDVIEW DRIVE
SO. SAN FRANCISCO, CA 94080
MON. - SAT.
9:30 - 6:00

Get MicroTimes delivered to Your User Group!

Your name ____________________
Address ____________________
Cross Street ____________________
City ____________________ State ________ Zip ____________
Phone ____________________
Number of members in your user group ____________________
Amount of magazines desired ________ Type of User Group ____________

* Magazines must be dropped off at a member's home or place of business in our normal range of distribution
For more information call Johnny Erokan at MicroTimes, (415) 652-3810

cisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408)287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

Berkeley P.C. Users Group. Meets on the 2nd Tuesday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group - informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Bay Area Leading Edge User Group. Interested in starting a Leading Edge User Group? Write to Jim Williams, 26765 Calaroga Ave., Hayward, CA 94545.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events iiinformation call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #153, Berkeley, CA 94709. Free meetings on campus (UCB). General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall. Beginners: 6 pm Tuesdays, 230 Wheeler. Developers: 6 pm Wednesdays, 30 Wheeler. Call the office for this week's topic. Reese Jones, (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUK for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Emphasis on education of Mac users. Meetings: Room 104, Science Building, College of Marin, 2nd Thursday of each month, 7:30 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Louden Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megs of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

100's of Discounted Software Programs

I.B.M.

☐ Amortizer III	$\$66^{75}$
☐ Depreciation Plus	296^{25}
☐ Investor III	186^{25}
☐ Property Management	296^{25}
☐ Cornerstone	74^{96}
☐ Dollars & Sense V 2.0	112^{46}
☐ Microsoft Flight Simulator	37^{46}
☐ Microsoft Windows	74^{25}
☐ Microsoft Learning DOS	37^{46}
☐ Enchanter	29^{96}
☐ Chem Lab	29^{96}
☐ JK Lasser's Your Money Mgr.	67^{46}
☐ Jet	40^{56}
☐ Microsoft Word V 3.0	279^{00}
☐ Webster Spell Checker	44^{96}
☐ Harvard Total Project Mgr. 1.1	274^{00}
☐ First Choice	111^{75}
☐ DAC EASY Accounting	52^{46}
☐ DAC EASY Payroll	37^{46}
☐ Hacker II	29^{96}
☐ Shanghai	29^{96}
☐ Zork II	40^{50}
☐ Math Plan	145^{90}
☐ Office Graphics V 4.0	108^{75}

APPLE

☐ Where Is Carmen San Diego	$\$29^{96}$
☐ Word Perfect	111^{87}
☐ P.F.S. File (School)	93^{75}
☐ Toy Shop	44^{95}
☐ Microsoft Multiplan V 1.07	71^{25}
☐ Dollars & Sense	89^{95}
☐ DBase II Apple V 2.43	399^{00}
☐ Witness	29^{96}
☐ Zork II	33^{71}
☐ Hacker II	29^{96}
☐ Shanghai	29^{96}
☐ Archon	11^{90}
☐ Snoopy Writer	22^{46}
☐ Stickybear Drawing	29^{96}
☐ Stickybear Math	29^{96}
☐ Stickybear Reading	29^{96}
☐ Stickybear ABC	29^{96}
☐ Newsroom	44^{96}

MACINTOSH

☐ Microsoft Flight Simulator	$\$37^{46}$
☐ Toy Shop	48^{70}
☐ Microsoft Works	221^{25}
☐ Microsoft Word (Processor) V 1.05	146^{25}
☐ Microsoft File (DBase Mgr) V 1.02	146^{25}
☐ Dollars & Sense	112^{46}
☐ JK Lasser's Money Manager	52^{46}
☐ Hacker II	37^{46}
☐ Zork II	37^{46}
☐ Millionaire	44^{95}
☐ Reflex	74^{96}
☐ Early Games For Children	37^{37}
☐ Print Shop	59^{95}
☐ Shanghai	33^{70}

AMIGA

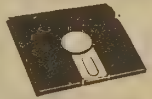
☐ Lattice Mac Library V.1	$\$75^{00}$
☐ Lattice Text Utility V.1	56^{25}
☐ Lattice C Compiler	112^{46}
☐ Lattice Unicalc Spreadsheet	59^{99}
☐ Deluxe Video	81^{00}
☐ Aegis Images	59^{99}
☐ Hacker II	37^{46}

COMMODORE

☐ Grovers Animal Adventure	$\$11^{21}$
☐ Ernies Big Splash	11^{21}
☐ Zoids	22^{46}
☐ Transformers	26^{21}
☐ Destroyer	30^{00}
☐ Sargon III	29^{95}
☐ Super Sunday	26^{25}
☐ Paperclip w/Spell Pack	33^{70}
☐ Paperclip Word Processor	44^{96}
☐ Personal Accountant	26^{25}
☐ Newsroom	37^{45}
☐ Trio	37^{45}
☐ Gremlin Hunt	18^{77}

If You Don't See It Call Us

Floppy Disko



P.O. Box 3614
Orange, CA 92665
Order Hours 8AM - 5PM
Pacific Time
Monday Thru Friday

(714) 998-4436

Prices subject to change w/out notice. Some items may not be available for all computer models.
Corporate accounts welcome.

Order Here

Merchandise Subtotal $ ________
Shipping & Handling $ 3.00
CA Res. Add 6% Tax $ ________
Total Enclosed $ ________

Check Below For Free Catalogue w/Savings On 100's Of Software Programs

______ **IBM** ______ **Apple**
______ **Commodore** ______ **Other** ____________
Special Needs-List ____________
Model Of Computer ____________

Method of Payment:
Check______ **Money Order**______
C.O.D. ______
* **If C.O.D. please add $1.90 For UPS Chrg**

Name: ____________
Address: ____________
City: ____________
State/Zipcode: ____________
Phone: ____________

SPECIAL OFFER!!
FREE BOX OF DISKETTES
(DS/DD)
with every purchase of $100 or More!!

• INSIDE GENERAL PRINTING: #2 •

Debbie Dovala, Printing Supervisor

THE SOUNDS OF

★SERVICE★

THE clackety-clack of the offset press is the heartbeat of General Printing. Our machines can produce up to 5,000 finished pieces per hour, ranging in size from an envelope to a 22" x 29" sheet. Multi-color design requiring close registration is just the kind of challenge that keeps our skilled professionals whistling while they work. And we're happy to sound off about our *full range of services:* design, typesetting, camerawork, and of course **free pick-up and delivery**. It's no wonder that you so often hear "General Printing" repeated as *the name to remember for professional impressions.*

MULTI-COLOR PRINTING

DESIGN, TYPESETTING, BINDERY

GENERAL PRINTING

FREE PICK-UP & DELIVERY

548-2201

• 2331 FIFTH STREET AT CHANNING, BERKELEY CA 94710 •

MicroCom Systems

OUTSTANDING SOFTWARE

For IBM PC's and Compatibles

$3.50 PER DISK SMALL QUANTITIES

$3.00 PER DISK FOR TEN OR MORE

$1 OFF 5 DISKS OR MORE WITH THIS COUPON

- ☐ **BUSINESS 1**—EZ-Forms business form generation.
- ☐ **CAD 1**—Altamira, 4 color object oriented drawing prog.★
- ☐ **COMM 3**—Compression and archival utilities.
- 5 **COMM 4a,b,c,d,e**—(5 disks) RBBS Bulletin Board System 14.1D.
- 2 **DATABASE 1a,b**—(2 disks) The File Express menu driven general purpose database.
- ☐ **DATABASE 3**—The pBASE relational database.
- ☐ **EDUCATION 1**—Interactive DOS tutorial for new PC users. Makes learning DOS painless
- 2 **FINANCE 1a,b**—(2 disks) PC Accountant 2.0 personal bookkeepping/finance management.
- ☐ **GAMES 1**—3-D PacMan, Kong, SpaceWar, JanitJoe.★
- ☐ **GAMES 2**—Qubert, Pango, Centipede, Monopoly.★
- ☐ **GAMES 3**—Blackjack, Arm Chair QB, and Empire.
- ☐ **GAMES 4**—Castle, StarTrek, and the original Adventure.
- ☐ **GAMES 5**—The Hack adventure game from the universities. Like Rogue, only more complex.
- ☐ **GAMES 6**—Pinball, Othello, Sopwith (fly one).★
- 2 **INFO 1a,b**—(2 disks) Cooking recipes database with keyword/ingredient retrieval prog. Add your own recipes.
- ☐ **LANGUAGE 5**—Turbo Pascal interactive debugger, pop-up help, formatters, et cetera.
- ☐ **LANGUAGE 7**—Complete Pascal interpreter, compiler, and debugger. Great for learning Pascal!
- ☐ **LANGUAGE 8**—Xlisp 1.7, the standard for AI langs.
- ☐ **MUSIC 1**—Many clever tunes, and an excellent color graphics music editor.
- 2 **MUSIC 2a,b**—(2 disks) PianoMan 3.0 polyphonic music recording and playback program.
- ☐ **ORGANIZER 1**—DeskMate, a Sidekick clone, and the Judy calendar program.
- ☐ **ORGANIZER 3**—The PC-Outline Resident windowing outline editor/thought organizer.
- ☐ **PICTURES 2**—High res. digitized pictures. Graphics req'd.
- ☐ **PINUP 2**—Provocative high res. pinups. Graphics req'd
- ☐ **PRINTER 1**—Font & sideways utils, spooler, banner mkr.
- ☐ **UTILITIES 1**—A collection of invaluable DOS utilities.
- ☐ **UTILITIES 2**—More invaluable DOS utilities. Too many to list here!
- ☐ **UTILITIES 3**—Complete set of debugging and diagnostic utilities.

NEW RELEASES/UPDATES

- 2 **CAD 2a,b**—(2 disks) Advanced 2D/3D drafting program. 640k.★
- ☐ **CAD 3**—The PC-Flow, flowchart creation program.★
- 2 **COMM 1a,b**—(2 disks) Version 2.4 of the ever-popular Qmodem.
- 2 **COMM 2a,b**—(2 disks) Procomm 2.42, an excellent modem program with terminal emulation.
- ☐ **EDUCATION 2**—Learn the Presidents, States (and capitals) and the periodic table.★
- ☐ **EDUCATION 5**—Learn Origami, the Japanese art of paper folding, with step by step animated instructions.★
- ☐ **EDUCATION 7**—Learn Basic with this interactive Basic tutorial.
- 2 **FINANCES 3a,b**—(2 disks) Express Calc 3.12, a powerful spreadsheet program.
- ☐ **GAMES 8**—The Striker helicopter attack game, and Risk, the game of world domination.★
- ☐ **GAMES 9**—EGARisk, world domination in very high res. EGA required
- ☐ **GAMES 10**—Solitaire, Golfing, and Sailing in the Bermuda triangle.★
- ☐ **GAMES 12**—Chess, Backgammon, and Wheel of Fortune. Graphics not required.
- ☐ **GRAPHICS 1**—Record and play back screen images! Excellent for demo creation, training, etc.★
- ☐ **HUMOR 1**—Practical, impractical & other jokes
- 2 **INFO 2a,b**—(2 disks) Zip-Phone, national areacode/prefix to zip-code cross ref. A must for businesses.
- ☐ **LANGUAGE 1**—PDProlog 1.91a, an advanced language for artificial intelligence applications.
- 2 **LANGUAGE 3a,b**—(2 disks) The A86 2.18 macro assembler and debugger. A complete assembly development system.
- ☐ **LANGUAGE 10**—Augusta, a subset of the Department of Defenses' new programming language ADA.
- 2 **LANGUAGE 11a,b**—(2 disks) Forth-83 2.1 4th generation programming language.
- ☐ **SHELL 4**—Automenu customizable menu facility, and the HDM II 4.04 hard disk menuing system.
- ☐ **UTILITIES 5**—Utilities for formatting, parking, and optimizing hard disk drives.
- ☐ **UTILITIES 6**—Advanced utilitiess including Dpath, Esc, Hotdos, Pushdir and Popdir. Resident program utilities and more.
- ☐ **UTILITIES 7**—More Advanced utilities including MasterKey (undeletes files from hard disks), Killdir
- 2 **WORD 1a,b**—(2 disks) PC Write 2.71, a powerful word processing system, with built in spell checker.

★Disks so marked require color graphics

Cost of Disks ____________
CA Res Sales Tax ____________
Ship/Handling $1.00
Total Enclosed ____________

MicroCom Systems
P.O. Box 51657, Palo Alto, CA 94303
Phone Orders: (415) 325-6500
M-F 7 am-9 pm, Sat-Sun 8 am-5 pm

MT-5/87

BUILD YOUR OWN IBM COMPATIBLE
AND SAVE A BUNDLE
by AUBREY PILGRIM

Published by TAB BOOKS, this book can show you how to build your own PC-XT or the powerful 286 AT. It has over 100 close up photos that show the step by step assembly process. With this book anyone can assemble a powerful computer, learn how they operate, and save lots of money.

If you don't want to build your own you can buy a bare bones system and add to it. You can configure it anyway you want to. There is 4 billion dollars worth of hardware for the IBM and compatibles. You only have to plug it in. You don't have to know programming for there is also about 4 billion dollars worth of software for these machines.

This book has chapters on the assembly of an XT, an AT and even one on how to upgrade an IBM. It has chapters on each of the main components of the computer such as the mother board, drives, disks, monitors, memory, printers and other peripherals. It also has chapters on the elementary DOS commands you will need to know, recommended software, and many other helpful chapters for the beginner and the experienced user. This book can save you hundreds, or even thousands, of dollars.

Send $14.95 plus $2.00 tax and handling to:
Aubrey Pilgrim,
1359 Phelps Av. #1, San Jose, CA 95117
This book is also available in most bookstores.

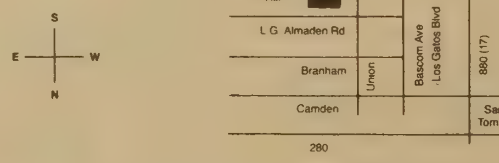
IN TOUCH
CELLULAR TELEPHONES

"BE *IN TOUCH* WITH YOUR WORLD"

- Mitsubishi
- Audiovox
- Novatel
- General Electric
- Motorola
- Fujistu
- Panasonic
- Oki
- Mobira
- E.F. Johnson

CALL TODAY FOR YOUR *PERSONAL* CELLULAR TELEPHONE DEMONSTRATATION

As Little as $19.95 Per Month!
(Installation, deposit, antenna, number assignment and air time are extra.)



5244 Union Avenue, San Jose, California 95124
(408) 559-7922

GTE
Mobilnet℠ Authorized Sales Representative

Bay Area Mac M.S. Basic Users Anonymous. B.A.M.M. S.B.U.A. Meets second Tuesday of each month, 7:00 pm, at Sanctuary of Noe Valley Ministry, 1021 Sanchez Street, San Francisco. First tentative meeting will feature utility program demonstration. Bring a disk and get a copy. Also: Show & Tell, Kvech, Help and Trash-The-Low-Level-Languages. For more info, contact Ted Jones, 4145 24th Street, San Francisco, CA 94114, (415) 826-9239.

Mac Health User Group. For DentalMac, Medimac and Chiromac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in health-care practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets College of Alameda, 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for room number, which changes occasionally.

PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK/TRS

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. MS-DOS and Tandy. Newsletter, help and education, access to all popular public libraries (PC-SIG, CompuSoft, Public Brand. Instruction and problem solving. Meetings: MS-DOS — 25555 Hesperian Blvd., Hayward, Chabot College, 8 pm 3rd Friday, Room 1564; Tandy 2nd Friday, 8 pm, Room 600). Contact B.B. Jarvis, 1975 Paseo Del Cajon, Pleasanton, CA 94566. (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

South Bay TRS 80 Users Group (SBUG). For info write P.O. Box 60116, Sunnyvale, CA 94088 or call Don Rhodes at (408) 996-1008. BBS: (408) 253-6293. Meetings, Cupertino library, 3rd Tues., 7:15 pm.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets College of Alameda, 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for room number, which changes occasionally.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200. 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphatronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

SOUTHERN PACIFIC

ICOLATUG. User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

TEXAS INSTRUMENTS

San Francisco 99ers One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings 12 noon, third Saturday of the month, 3751 Elston Way, Oakland. Contact Gary L. Anderson, 24816 Mango St., Hayward, CA 94545, (415) 786-1776.

South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

Timex/Sinclair Users of Silicon Valley (GUTS/SV) c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24-hours, 32 lines (no waiting!).

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor* Group is the San Francisco Bay Area Victor User's Group. We have three chapters East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408)238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

B.A.H.U.G. Heath/Zenith computers, CP/M, MS-DOS (300/1200 baud BBS 415-365-7836). Meetings 2001 Middlefield Rd., Redwood City, CA, 7 pm second Thursday. Contact John Lindquist, 642 Hollenbeck Ave., #1, Sunnyvale, CA 94087.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

Moving? Take MicroTimes with you. See subscription blank this issue or write:

MicroTimes
Subscriptions
5951 Canning St.
Oakland, CA 94609

MICROTIMES
CLASSIFIEDS
WORK!

COMPLETE SYSTEM
MJC TURBO - 2640

Features:
- Run 4.77 or 8 mhz Turbo Speed
- 640k Memory Installed
- Two 1/2 Height Floppy Drives
- 12" hi-res monochrome monitor
- Parallel Printer Port
- Floppy Disk Drive Card
- AT Style Keyboard
- 150 Watts Power Supply
- One Year Warranty

MJC

ONLY $699

* Optional: Hard Drives, Color Monitor, DOS 3.2 w/GW-BASIC & Peripherals

Call 415-578-0535 ask for Kelly Shaw to order, or write to MJC Technology Co., 1163 Chess Drive #F, Foster City, CA 94404

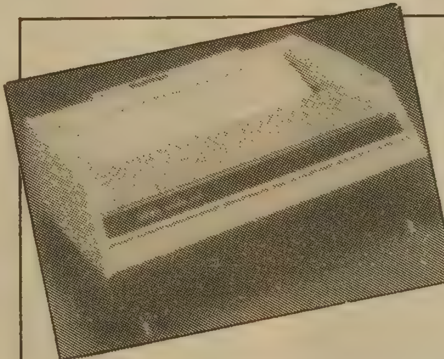
$$$ DEALERS ONLY $$$

IBM COMPAQ

BEST WHOLESALE PRICES

Hewlett Packard • Toshiba • NEC • Epson • Seagate • Video 7

Lucas International
3419 Pacific Blvd.
San Mateo, CA 94403
(415) 341-6351



GUARANTEED NO WASTE FORMS
WITH THE FORMSPRO 2000
BY PRINTEK

FORMSPRO 2000 FEATURES:

- Up to 11 Part form
- 200 CPS in Draft Mode
- 80 CPS in EQ (LETTER QUALITY)
- 136 Columns at 10 CPI
- 227 Columns at 16.7 CPI
- Tear Bar-with Auto Scroll
- Forms Length-1" to 14"
- Serial and Parallel Interfaces
- 2K Ram buffer Expandable to 6K
- Diablo Software Compatible
- ANSI X3.64 Compatible
- Optional Fonts and Bar Code 39

TO PLACE YOUR ORDER PLEASE CALL:

DEALER
NORTHERN CALIFORNIA
NATIONAL DATA SOLUTIONS
(415) 638-1224

DISTRIBUTOR
LEASING VENTURES INC.
477 Roland Way, Oakland, CA 94621
(415) 638-1070, (916) 444-7174

printek
Benton Harbor, Michigan

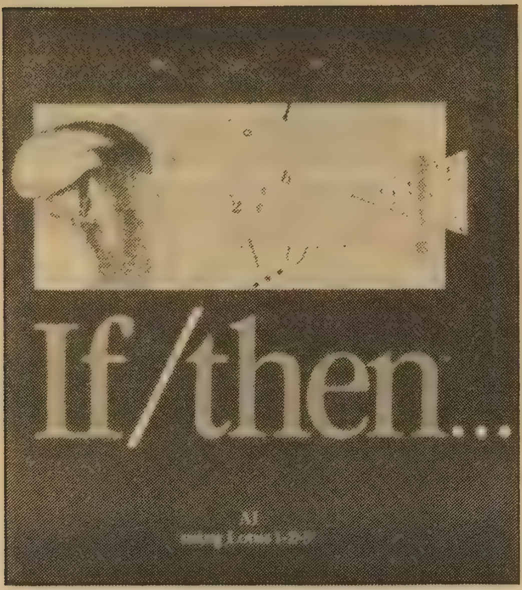
COMPUTER SWAP AMERICA, INC.
EARLY ADMISSION
with this coupon

MAY 30 • JUNE 27, 1987 • 10 AM to 5 pm

Present this coupon with your $5 admission Saturday morning, May 30th/June 27th, at the Exposition Hall entrance and you'll be eligible to shop at our show 20 minutes early (9:40 AM) for first-come, first-served bargains. Duplicates from copy machines accepted. Limit one coupon per customer.

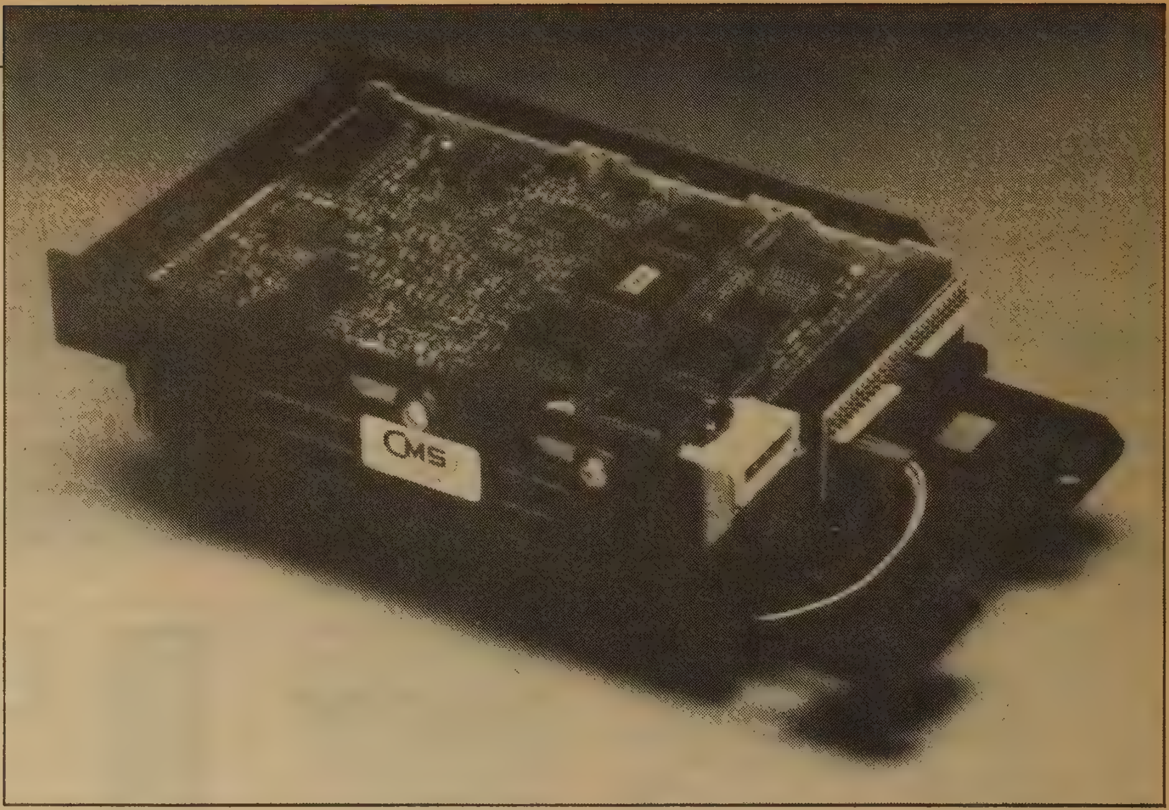
The Bay Area's First & Best Personal Computing Bargain Show & High Technology Flea Market
SANTA CLARA COUNTY FAIRGROUNDS
344 Tully Road • San Jose, California

FOR EXHIBITOR AND SHOW INFORMATION CALL (415) 366-9162
Computer Swap America • P.O. Box 620107 • Woodside, CA 94062



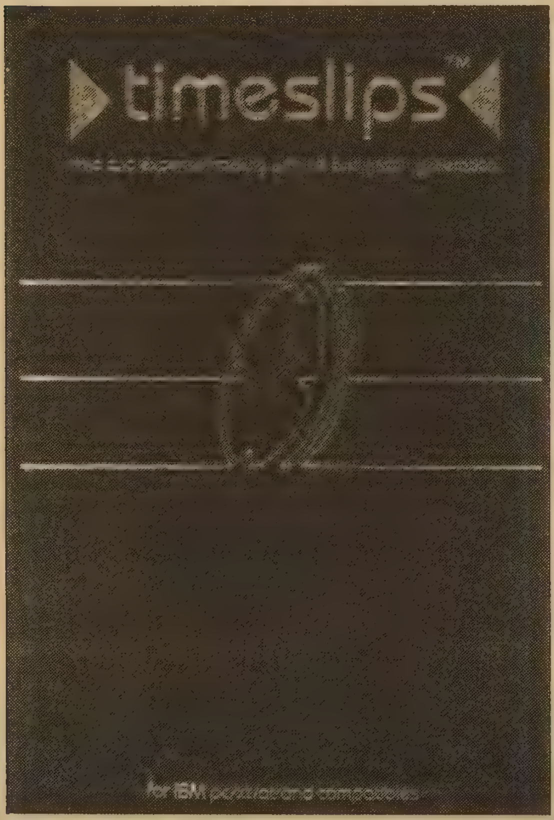
If/then Teaches Artificial Intelligence Using Lotus 1-2-3

If/then is a guidebook and spreadsheet package that works to teach rule based Artificial Intelligence using *Lotus 1-2-3*. It is designed to teach in as few as ten hours the essential concepts of AI in a clear and logical way. It includes a series of templates that lets users incorporate elements of AI in their spreadsheets. ($69.95). *Lotus 1-2-3*, release 2.0 or 2.01 is required. If/then Solutions, 1 Mallorea Way, Suite 301, San Francisco, CA 94123. (415) 346-5885.



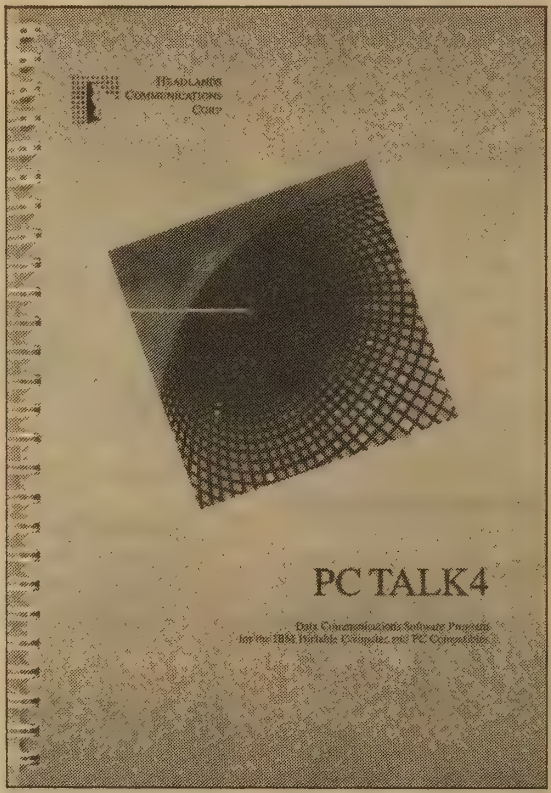
New 40MB Internal Disk Drive For Macintosh SE

The Pro-40 from CMS Enhancements is a 40 MB internal disk drive for the Macintosh SE. The 3.5" half height disk drive features an average access time of 29 ms. and data transfer at a rate of 1.5 MB/Second. It comes with a mounting bracket and all the necessary components. Thoroughly tested by CMS before shipping.($1,395) CMS Enhancements Inc., 1372 Valencia Ave., Tustin, CA 92680. (714) 259-9555.



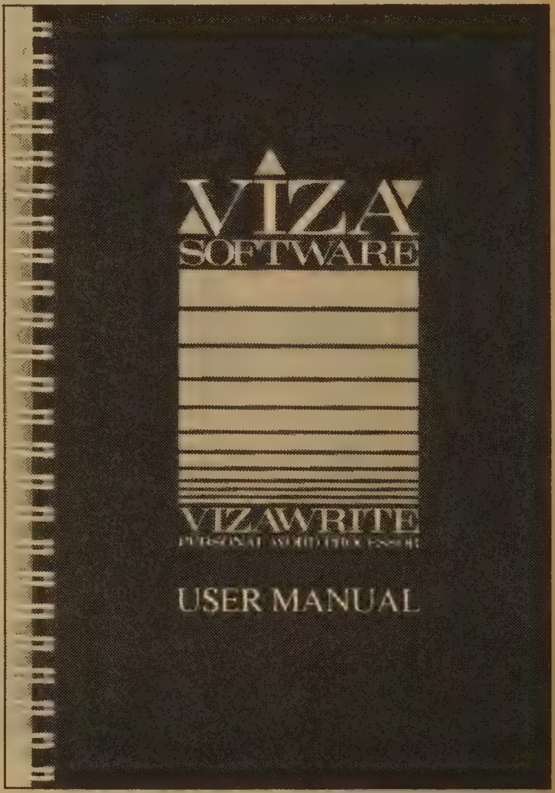
North Edge's Latest Update: Timeslips III

Timeslips III is the latest upgrade of North Edge's time and expense, tracking and billing software. This version extends the old 240 client limit to 3,400. New features include recovery from a final billing cycle, automatic back-up of data file and contingency billing. The new version requires a hard disk and at least 384K of internal memory on your IBM PC/XT/AT or compatible. Introductory price, $199.95. $100 to upgrade. North Edge Software Corp. P.O. Box 286, Hamilton MA 01936. (617) 468- 7358.


Headlands Communications Corp
PC TALK4
Data Communications Software Program for the IBM Portable Computer and PC Compatibles

New Features In PC TALK 4

Among the new features found in version 4 of PC TALK is XMODEM.CRC, the latest error checking protocol for accurate file transfers. The new version also provides easier access to mainframe computers and large databases. New time saving features allow the user to stay in PC TALK while accessing DOS commands, subdirectories and files. While priced at $129, it is available for a limited time only at $99. Previously registered users may upgrade for $45. Headlands Communications Corp., P.O. Box 8, Tiburon CA 94920-0008. (415) 435-0070.



Features Of A Dedicated Word Processor In Low Priced Vizawrite

Vizawrite from Progressive Software Peripherals is a personal word processor designed to offer the ease, power and style of a dedicated word processor at a reasonable price. *Vizawrite* includes multiple windows that support the simultaneous viewing of up to nine separate sections of a document on screen, a "what you see is what you get" mode, a clip board, mail merge and a 30,000 word spell checker. PC version $59.98. Progressive Peripherals Software Inc. 464 Kalamath Street, Denver, CO 80204. (303) 825-4144.

LIFETIME WARRANTY

QUALITY DISKETTES

SAME DAY SHIPPING
QUANTITY ORDERS=LOWER COST
P.O. Accepted from Gov. Agencies & Schools

LIFETIME WARRANTY

5¼ SS/SD
22¢

5¼ DS/DD 29¢

For: Labels, Tyvec Sleeves & Write Protect Tab Add 5¢

BOX PRODUCT
$^{\$}3^{30}$ Per box
inc: Labels, Anti-Static Sleeves &
Write Protect Tab (min 100)

COLOR DISKETTES

16 Different Colors
Prices include: LABELS, SLEEVES, & WRITE PROTECT TAB
Colors: Red, White, Yellow, Blue (Light/Medium/Dark), Pink, Burgundy, Green, Brown, Beige, Orange, Gray, Lavender, and Rainbow Packs (Available)

5¼ DS/DD 45¢ min 100

HIGH DENSITY DISKS for IBM AT & Compatibles

5¼ ATHANA HD (Box of 10)	12^{50}
5¼ DS/HD Black in 10 packs (min 50)	1^{00} ea.
5¼ DS/HD Blue & White (min 50) in 10 packs	1^{20} ea.

3½ MAC PACKS

25 Pack w/o labels DS/DD	$\$1^{25}$

Avery® Labels

3½ Color Coded Labels (Box of 80)	$^{\$}4^{25}$

Avery List & Mail

(4145) 3½x15/16 1 up (1000)	$^{\$}7^{29}$
(4146) 4x1 7/16 1 up (1000)	9^{95}
(4161) 4x2 15/16 Shipping (500)	11^{49}
(4166) 3x5 Index Cards (500)	9^{95}
(4167) 3½x6 Post Cards (500)	11^{95}
(4168) 2 1/6x4 Rotary Index (500)	9^{95}
(4169) 3x5 Rotary Index (500)	11^{49}
(4170) List & Mail Software IBM PC/XT/AT	59^{95}

Avery Laser Printer Labels

(5160) 2 5/8 x 1 30 Labels per Sheet (750)	7^{35}
(5260) 2 5/8 x 1 30 Labels per Sheet (3000)	24^{88}

DISKETTE STORAGE

HOLDS (50) 5¼	6^{95}
HOLDS (100) 5¼	8^{95}
HOLDS (120) 5¼	11^{95}
HOLDS (80) 3½	9^{95}

COLOR DISKETTES

AMERICAL GROUP

MAGNETIC
MEDIA
DISTRIBUTOR

(818) 906-1132

STORE HOURS: M-F 9-6

C.O.D. Pick Up or
Send your order with check to:
AMERICAL GROUP
14200 Ventura Blvd., Ste 201
Sherman Oaks, CA 91423

ADD $3.00 SHIPPING FOR FIRST 100
DISK & $1.00 EVERY 100 THEREAFTER
CALIF. RESID. ADD 6½% SALES TAX.

P.O. Accepted from Gov. Agencies & Schools

COLOR MAC

CLASSIFIEDS

EMPLOYMENT OFFERED

Tired of the "Grind"? Growing computer dealer seeks energetic, ambitious, fun-loving sales reps for San Francisco store. Must have excellent communication skills, proven sales ability, and a strong dedication to customer support. Micro Computer knowledge preferred. Contact Jim Dexter at (415) 398-4541.

Earn money in your spare time. Free information. Write Holmes & Holmes, Inc., PO Box 488, Union City, CA 94587.

PCB Layout Sales Partner Wanted. I have PCAD(PCB-3). Seeking confident sales person for business cooperation (415) 764-5526.

EMPLOYMENT OFFERED

Experienced writer, strong technical background, freelance only. Misra, (415) 792-7210 Evenings.

HARDWARE FOR SALE

Commodore 64 with disk drive and 100 games and utilities. $500 (707) 643-7438.

CRT Terminals, Monitors, & Modems: New, used, buy, sell, fix, rent (415) 653-3123

TRS80 M004 Business System. Accounting, Word Processing, Data Base, Spreadsheets, DOSs, Games: $450. (818) 982-0467.

Computers Bought And Sold. California Computer Exchange (415) 552-0920 or (800) 652-1532.

Xerox 820, 2 8" floppy drives, CP/M compatible, word processing software, documentation. $500 or B/O (415) 574-0311.

CITOH 24LQ Color Graphic Printer. New warranty, shipshape. Too sophisticated for me. (415) 824-1139.

Trade Pertec Sabre with pickos for pickup. Call Michael at (415) 453-0305.

IBM Proprinter XL, Wide Carriage. Best price (415) 653-2727.

Apple IIC, Monitor, Printer, Mouse, Appleworks. Excellent condition. All original packaging and documentation. $1000 (415)441-4860.

Used Letter Quality DTC380Z Printer, Parallel, IBM Compat, BLE, $450 or B/O. (415) 433-0120.

HARDWARE FOR SALE

Apple IIE, 2 drives, color & mono monitors, 2 serial cards, plotter, thunderclock, and software, $1700 or B/O. (415) 537-9212.

NO FRILLS GENERIC SOFTWARE

(IBM Compatible)

Word Processor	$19.95
Data Base Program	$19.95
Full Spread Sheet	$19.95
Business Form Maker	$19.95
File Manager	$19.95
Utilities Programs	$9.95
Games Disk (10 Games)	$14.95

TCI Software

Call to Order

(800) 338-0090

FREE Phone Support

All Above Programs Only $99.95

HARDWARE FOR SALE

KAYPRO 4/84 $500, Televideo TS-803 $500, 806/10MB $400. Glenn Hoelscher (415) 460-6310 Days, (209) 239-5636 Eves.

HARDWARE FOR SALE

PCjr ROM Cartridge Kits. Intergrity Technology, 105 Serra Way, Suite 230, Milpitas, CA 95035-0604.

PCB Volume Fabrication from Hong Kong. Integrity Technology, 105 Serra #230, Milpitas, CA 95035. (408) 262-8640.

Northstar Horizon, 2 floppy drives, wood case, no terminal, excellent condition. Bruce (415) 658-9545 leave message.

HARDWARE FOR SALE

Apple II+, 2 drives, NEC monitor, 80 column, CPM, software, manuals $500. (408) 773-0959.

PCjr, 256k, 360k drive, color monitor, parallel port, 2 keyboards, public domain software. $500. (916) 424-8465.

PCjr, Color Monitor, 128K, Serial, Parallel Ports, Internal Modem, DD, Software. (415) 527-3821 after 6PM/leave message. $550

Compac portable 20MB HD. MS-DOS 2.11. Like new. Complete. Must sell (415) 788-4644.

HARDWARE FOR SALE

PCjr, 128K, Sidecar w/mouse $165, Power Expansion $75, Amdek Amber monitor $65. David (415) 355-1186.

IBM/XT Compatible 640K, 20MB Seagate drive, keyboard, monitor, MGIP FDC, HDC, One year warranty, $895. IBM/AT ask. PC-COM (408) 295-1606. 404 S. Third, Suite 2, San Jose, CA 95112.

Macintosh: 128K, 512K, plus with external drives, Apple modem, Best offer (408) 997-6840.

HP LAPTOP. Powerful LCD Lotus modem. Case was $3000, sell for $975 or B/O (415) 849-0411.

Apple IIE computer with floppy disk drive & printer. $1098. No reasonable offer refused. (408) 370-9505.

Lap-Top Bondwell-8. Unused MS-DOS $850. (209) 943-1510 (Stockton) will deliver.

Xerox Computer 820-II, Upgrade to 8/16, Monitor, Dual Disk Drive, 2 Keyboards, Qume printer, Software, New box diskettes. $400. (415) 459-0885.

AT&T UNIX PC 7300, UNIX V System & Utility, graphic packages, 20MB HD, modem inside, floppy drive, graphic monitor. $4000 or B/O. Koorosh (408) 253-9300 ext. 165 (call 9-6).

Apple II + 200, Epson Printer (graphics), Joystick. Software: games, business word processing. $750 or B/O (408) 866-5134, (408) 977-3374.

Almost new Commodore 64 Computer, disk drive, dot matrix printer, operator manuals, software, $500 (415) 479-9691.

HP Laserjet 500 Plus, Digital Rainbow 100 w/software. Both like new. B/O (415) 589-0700.

ALAMEDA COMPUTER SERVICES
1408 A Encinal Ave., Alameda • 521-4480

KAYPRO COMPUTERS The Future's Built In

WHY WE LIKE KAYPRO

1. Ready-to-run software including WordStar 4.0
2. Thirty-three year old company that will be here next year and many more to support you.
3. Superb dealer support to help us support you.
4. R&D staff that brings you such things as the non-obsolescent motherboard slot.
5. Leader in new products and best of all!

MADE IN THE U.S.A.

XEMAG®

PROTECTION SERVICES

XEMAG's new Cloaking Device Protection for IBM PC's

- Protects against all known software and hardware copiers.
- Install/Uninstall for hard disk systems.
- Allows a predetermined number of protected back-up copies.
- Easy menu driven installation onto your software.
- *Protections for all formats.*
- *Division of XIDEX Corp.*

1-800-367-6217

Hi-Tech Computer Repair

- Component Level Repair
- Compaq Power Supplies
- Mother board

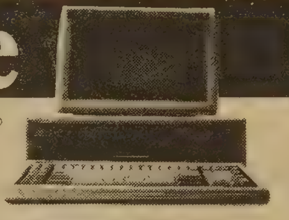
Repair on:

- IBM PC/XT
- Compaq Deskpro
- AT&T 6300
- 8088 compatible PCs

1331 Meadow Lane
Concord, Calif. 94520

415-827-1555

Rent or Lease



COMPAQ® Macintosh® IBM®

- *Short & Long Term*
- *Up to 100% Purchase Credits*
- *New & Used Sales*

MICRO-RENT CORPORATION

Serving Northern and Southern California

(415) 927-1212 (408) 720-9112

WordStar Users

Program to print WordStar files on Apple laser writer. Send self addressed, stamped envelope to:

P.O. Box 1331
Menlo Park, CA 94025
or call
(415) 325-4277

NON IBM COMPATIBLE SOFTWARE!

Most Machines
Write or Call for
Free Catalog
OFF THE WALL SOFTWARE
19545 Sherman Way
Suite 34
Reseda, CA 91335
(818) 349-0742

To Place A Classified Ad

Free Ads: Private individuals may have *one* free classified ad of 15 words or less; additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

To Order By Mail: Send coupon to:
MicroTimes Classifieds
5951 Canning St.
Oakland, CA 94609

To Order By Phone with Visa or MasterCard only, Call: (415) 652-3810

Classified July Issue: Deadline June 1, noon

For a mere fraction of your paycheck — buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue

Category ☐ Employment Offered ☐ Employment Wanted ☐ Equipment
☐ Hardware For Sale ☐ Office Space ☐ Personal ☐ Services
☐ Software For Sale ☐ Video ☐ Wanted ☐ Will Trade

Cost of ad ________ X number of issues to run ________ = Amount Enclosed ________

Send check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp Date ________
Account # ________
Signature ________

Advertisers Name ________
Street Address ________
City ________ State ________ Zip ________
Phone (____) ________

Send To: MICROTIMES Classifieds

1800 N. Highland Ave. #220
Hollywood California 90028

OR

5951 Canning Street
Oakland California 94609

CLASSIFIEDS

HARDWARE FOR SALE

Lap-Top XT with floppy/hard disk. $104 1200 Baud Ext Hayes modem. PC-XT/AT Bare boards. Fabricate your PCBs. From Hong Kong. Wholesale. Integrity Technology, 105 Serra #230, Milpitas, CA 95035

PERSONAL

Albert Einstein had a sailboat for relaxation, recreation...What did he know? Call Jim Irwin Boat Broker (415) 883-9750.

SERVICES

CRT Terminals, Monitors, & Modems: New, used, buy, sell, fix, rent (415) 653-3123.

Computer Mailing Lists Computer dealers, user groups, publications, end users and more. Send for free catalog. Buffalo Enterprises, PO Box 29 Sebastopol, CA 95472 (707) 823-3239.

SERVICES

IBM and C64 Name Lists for rent. Contact Eve, Box -2009 (mt) Manteca, CA 95336 (209) 239-6006.

Rent A Clone -Complete Systems from $175/month. Lowest prices anywhere! Call computer Works (415) 222-WORK.

Align PC + Clone Drives $30 each. General PC repairs $50/Hr. (415) 489-4451.

Warren Sirota Associates: My 7 years of experience programming, teaching, and reviewing database systems means appropriate, reliable, and efficient satisfaction of your database needs. MS mathematics, references available. (415) 482-3979.

DBase and Clipper programming. Experienced in business and engineering applications. Contact Dave Sutton (415) 687-6056.

Professional Computer Consulting. Systems setup and programming services at low cost rates. Call (415) 928-9732. Wang Consultants, PO Box 27487, San Francisco, CA 94127.

SOFTWARE FOR SALE

IBM PC Software. $3.00 per disk. Send for your free catalog of some of the best and easiest to use software. Best Bits & Bytes: PO Box 5332, North Hollywood, CA 91616.

It's Here! Screen Magic, The Inexpensive productivity tool that allows fancy screen making and easy interfacing with MS-DOS Apple Programs. For more info, Call (415) 467-6453.

Sell, Sell, Sell Trigger & Light Year, new with registration. Regular $495, now $95 each (415) 598-0700.

TOPS NETWORKING
for PC & Mac
Free Consultation
& Installation
Prompt Reply
(415) 343-4658

MICRORIM®

ICAD SYSTEMS
415/485-0592
NORTHERN CALIFORNIA'S MOST EXPERIENCED RBASE DEVELOPER
■ Sales & Support ■

DESKTOP PUBLISHING
LASER PRINTING
MAC & IBM™
Computers To Go
539 S. Murphy S'Vale
(408) 746-2945

Disk and Tape Conversions

High quality conversions services and OCR scanning for Dedicated Word Processors, Mini and Micro Computers. Over 1000 3½", 5¼", 8" formats. Also 800-1600 BPI tape. Conversion between Wang, NBI, CPT, DEC, Vydec, Lanier, OS-6, Xerox, IBM Sys/34/36/38/5520, Mac, Victor, TRS, Apple, NSTAR, IBM-PC/AT/3½", HP, and most other microcomputers. We can convert directly into word processing software MS/WRD, WS, Samna, MM, PFS, and many others.

(408) 629-1088

DataFormats INC.

Desktop Publishing
Byron Brown
(415) 652-1243
Expert in
JustText, Ready,Set,Go!,
CricketDraw & Illustrator

64K ■ 128K ■ 256K
DRAMS
EPROMS
80287-10 ■ 80287-8 ■ 80287-3
8087-3 ■ 8087-2 ■ 8087-1
4416 ■ 4464
V-20 ■ V-30
BITTNER
ELECTRONICS
MasterCard VISA
(714) 497-6200
CALL NOW FOR FREE CATALOG

Authorized IBM-COMPAQ Dealer
has openings for
SALES REPRESENTATIVES
and TECHNICIANS
Full Time/Part Time
Positions Available
Send Resumes to
Universal Automated Solutions, Inc.
1655 N. California St.
Walnut Creek, CA 94596

dBase
programming & training
Also:
PC/Focus, SQL, Ingres
and others
Warren Sirota Associates
(415) 482-3979

COMPUTER SERVICE & REPAIR COMPUTER SERVICE

HONEST REPAIR AT AN HONEST PRICE

IBM • COMPAQ • AT&T • APPLE • OKIDATA • TELEVIDEO • EPSON • DIABLO • HP • DEC • WYSE • ZENITH • NEC

- Component-Level Repair Capability
- Hard Drive Repair
- Flexible Service Agreements
- We Specialize In Corporate Accounts
- Excellent References
- Call For Special Upgrades

REPAIR COMPANY
MICROCOMPUTERS & PERIPHERALS INC.

(408) 946-5015
1585 McCandless Drive, Milpitas
Other locations in San Francisco & Los Angeles

(800) 262-5015
For fast service—anywhere in the Bay Area—call toll free!

$2 PER DISK **HOT SOFTWARE** **IBM PC COMPATIBLE** **$2 PER DISK**

SEND $1 for 100+ DISK CATALOG ON DISK! $1 SHIPPING PER 5 DISKS + .07 TAX

E001	PC-WRITE 2.71 WITH SPELL CHECK (2)	**L002**	BASIC TUTOR
E003	PC-OUTLINE 3.22 MEMORY-RESIDENT	**LA001**	A86 ASSEMBLER/DEBUGGER (3)
S001	ASEASY 123 1A CLONE	**LC001**	C TUTOR BY KERNIGHAN
DB005	DBASE3 CLONE WITH 295K DOC (2)	**LC004**	J.P.L. C LIB & DOC (2)
DB003	DBASE3 TOOLS-CODE ANALYZER+	**LC007**	BOSS C WINDOW LIB
U010	MAIL LIST MANAGER	**LC009**	DR. DOBB'S EDIT-C/SOURCE
B001	PC-GEN LEDGER & PC-ACC REC	**LC010**	C EGA & GRAPHIC LIBS
B002	EZ BUSINESS FORMS GENERATOR	**LC011**	UNIX C-SHELL, 2.9/SOURCE (2)
D005	STILL RIVER SHELL-XTREE LIKE	**LP001**	TURBO TUTOR-INTERACTIVE
C003	DANCAD3D-WIRE FRAME CAD	**LP002**	TURBO PROCEDURES (2)
E009	HOMEBASE 2.0-2ND GENERATION DESKTOP ORGANIZER (2 DISKS)		

GENERIC COMPUTER SYSTEMS
22612 FOOTHILL BLVD., SUITE 200C, HAYWARD, CA 94541 581-1494

MICROMENDERS!

TOP PERFORMANCE REQUIRES TOP SERVICE

Don't trust your microcomputers to anyone but the best computer service company in the San Francisco Bay Area!

- Factory authorized on more lines than anyone
- Most-extensively trained technicians
- Fast, four-hour response time
- Low hourly rates
- Low, low contract service rates
- Huge, dedicated service parts inventory
- Largest independent, locally owned service group

MicroMenders
MICROSYSTEMS SUPPORT GROUP

TOLLFREE HOTLINE:
(800) 262-4447
Main Office: 81 Lansing St.
San Francisco, CA 94105

YOUR BEST SOURCE FOR
ICS, Computer Peripherals & Chips.

Specials For May:
8087 - 5/8/10 MHZ $98/145/210
80287 - 6/8/10 MHZ $155/240/290
4164 - 100/120/150 NS $2.5/1.5/1.0
41256 - 100/120/150 NS $4.5/3.0/2.8
V-20, V-30, Static Columns 1 Megabyte Col.
Quantity Discounts Available.
Dealers / Univ. / Govt. Agency Welcome

WESTECH INTERNATIONAL
Call For Volume Quote.
Tel. (408) 980-1788
Fax. (408) 980-1795

We Stand For Quality Parts.
Reliable Service and Prompt Delivery.

ADVERTISER'S INDEX

Tell Them
You Saw It
In
MicroTimes

Access to Software	58
Advanced	176
Advanced Micro Systems	69
Alpha Fine Furniture	143
Americal	171
American Digital Discount	145
American Ink Products	165
Authorized Technical Services	16
Bay Area Computers	4, 5
Best PC Supply	166
Blackship Trading Co.	66
C.A.T.S.	34
Cal Soft	59
Capitos Software	148
Cimpex	73
Club AT	39, 40, 41
Compac Micro Electronics	151
Computer Attic	111
Computer Center of Hayward	8
Computer Consulting Associates	71
Computer Furniture	59
Computer Graphics Center	160
Computer Insights	79
Computer Store	160
Computer Surplus Store	81
Computer Swap America	169
Computerland	125
ComputerMart	156, 157
Computerware	7
Computown	30, 31
CompuWorld	43
Comtex	139
Crescent Com	162
CSI	43
Cypress Distributors	148, 149
D-Data	153
DecTech	152
Diamond Software	22, 23, 24
Discount Micro World	141
Eastern Ent.	161
EFI'S Discount Computers	152
Eight Hundred Software	17
Empac	149
Ergonomic Computer Products	14
Everex	19, 20, 21
Floppy Disko	167
Friendly Software Store	68
Fry's	87-92
Garnet Business System	119
Gates Distributing	35
General Printing	167
Generic Computer Service	173
Golden Gate Shows	163
Guenther Computer	103
Guitar Showcase	147
Herb's Discount Software	129
HT Electronics	150
ICB	159
IMC	158
In Touch Cellular Phones	168
Info Technologies	37
Intellisoft	15
Jet Comp Enterprises	146
Jointek	123
Julian Systems	33
Kaypro	95
KGB Enterprises	42
Lucas International	169
Lytec Systems	162
Managing Technology	60, 61
Mercury Computers	28
Micro 1	13
Micro Market	146
Micro Strategies	38
MicroTech International	55
Microcom Systems	167
Micromenders	173
Micronics	129
MicroPoint	159
Microshows	114, 152
Microware Exceltek	53
MJC	169
Monarch Computers	27
Network Associates	117
NIC Technology	102
OEMI	9
Office Furniture Warehouse	94
Paperback Software	3
Payless PC	109
PC Nest	150
PC Sig	45
PC Tech	47, 164
Printer Works	114
PC Template	44
PC Upgraders	75, 76, 77
Peripheral Land	99
Precision Software Products	132
Printek	169
Profitline	133
Rent a Mac	8
Rosehill Systems	136, 137
San Jose Computers	36, 127
San Leandro Computers	74
Sci Tech Computer Stores	48, 49
Shoreline Software	101
Softklone Software	2
Softsel	64, 65
Software City	51
Software Connection	73
Software for Less	38, 164
Software Resource	112, 113
Software Solutions	10, 11
Storage Systems Engineering	165
Subscriptions	143
Sun Systems	29
Supersoft	142
Supreme USA Inc	154
Surah	131
Tanstaafl Co.	16
Tatung Science & Technology	34
Technology Marketing Group	14
TEK Computers	175
The Laser Edge	57
The Repair Company	173
3 F Associates	63
Tokyo Electroland	85
Toptek Micro Center Inc.	105
Tri-Con International	94
TSL	114
Tulin, Inc.	57
UCR	135
Universal Automated Services	121
Westech International	173
Wholesale Direct	36
Winners Circle	97
Xeltec	107
Y.E.S.	83

MICROTIMES
CLASSIFIEDS
WORK!

EXCLUSIVE COMPUTERS HEADQUARTERS

TEK COMPUTER

THE VALUE LEADER IN COMPUTERS

Guaranteed When You Buy

LOWEST PRICES ON
IBM • COMPAQ
• EPSON •
• TOSHIBA •
NEC

SELECTION: We stock and sell products made by the world's largest and most trusted names in Computers, Printers and Software Manufacturers.

VOLUME: Since we have multiple locations and our overhead is low, we buy and sell an incredible volume.

EXPERTISE: Since we deal exclusively with EPSON, TOSHIBA, COMPAQ, IBM, we get special factory training giving us the know how nobody else has.

ATTENTION: Our job is not finished unless you are satisfied. You *must* be happy.

Assurance After You Buy

Service from factory trained technicians

COMPARE OUR PRICES WITH OTHER DEALERS

SPECIAL OFFER #1
LAPTOP

TOSHIBA 1100 +	CALL
TOSHIBA 3100	CALL
NEC Multispeed	CALL

SPECIAL OFFER #2
IBM XT (1 Drive-256K)

Suggested Retail Price	$2175
YOUR COST	$1099

*Single unit price
Model 68

SPECIAL OFFER #3
IBM AT 339
(1.2 MB Drive-30MB HD)

Suggested Retail Price	$5295
YOUR COST	$3495

*Single unit price
Call for Quantity Pricing

COMPAQ DESK PRO 286
1.2 MB Floppy, 256K, 12 MHz

Suggested retail	$2999
YOUR COST	$1999

Astounding Prices On IBM
New Generation Of Computers!

Amazing Prices on APPLE COMPUTERS

Boards

IBM Enhanced Graphic Adapter	$450
IBM Color/Mono Adapter	195/185
AST Six Pack 64K + Sidekick	149
AST Advantage Expansion Board for AT w/128K	349
Vega Board by Video 7/Deluxe	299/369
Hercules Graphics Plus	209
Hayes 1200/1200B	379/410
Everex 1200 Modem	149
NEC EGA	430
Migent Pocket Modem	159

Hard Cards

Plus Development 20/40MB Card	659/Call
Western Digital's 20 MB Card	599

Hard Disks

20MB/30MB/40MB	329/399/599
40/80MB Hard Disk for AT	699/1099
20MB/60MB Tape Back-Up	599/799
120MB Hard Disk	2600

Computers

IBM AT 512K	$2299
IBM Sys 2 Model 30	1490
IBM Sys 2 Model 30.2 Dr. 20MB	2295
IBM Sys 2, Model 50 10MHz, 20 MB	3163
IBM Sys 2, Model 60.10 MHz 44MB	4659
COMPAQ Port 2 Dr	1600
COMPAQ Port II 1 Dr/20MB	3500
COMPAQ Desk Pro 2 Dr	1250
COMPAQ 286 Desk Pro 12 Mhz.	1999
COMPAQ 386 16 MHz	4700/5650

Software

Lotus 123 Release 2	$325
Symphony	410
Framework 2	365
D Base III +	395
Multimate	275
Word Star 2000/2000 +	260/299
Word Perfect 4.2	229
Microsoft Word 3.1	289
Ability	89
Enrich	225

Printers

Okidata 192/193	$335/475
Epson LQ800/1000	499/679
Epson LX86	199
Epson EX800/1000	498/649
Epson LQ 2500	1199
Juki 61/62/63	399/499/659
IBM Proprinter I/II	379/483
Toshiba 321/351	449/949
Epson FX86E/FX286E	359/549
IBM Quietwriter III	1495
Canon Laser Jet	1895
HP Laser Jet II	CALL

Monitors

IBM Enhanced/Color Monitor	$615/525
IBM Monitor Sys 2	525
IBM Mono Monitor Sys 2	220
Princeton SR12P	CALL
Princeton HX12 Color Monitor	399
Princeton MAX 12 Mono Monitor	169
NEC Multisync	569
Sony Multiscan	639

Leasing Available with Professional Guidance

*All Good While Quantities Last • ADD 3% For Credit Card • Prices Subject To Change

2740 El Camino Real
Santa Clara, CA 95051

master charge
VISA

139 Kearney (and Market)
San Francisco, Ca 94108

(408) 296-0455 **(415)362-6870**

The 386 Center

COMPAQ 386
$4600

SURAH 386
$2999

386 MOTHERBOARD
$1975

INTEL 386 BOARD
$1570

QUADRAM 386 BOARD
CALL

CALL FOR ALL 386 CONFIGURATIONS AND PRICES

SPECIALS

IBM XT COMPATIBLE SYSTEM 10 MHz w/1 FD, 640K, 30 Meg H.D. Monochrome Graphics Card and Monitor	$965
Letter Quality Printer w/System Purchase	$199
Peachtree Accounting Software w/System Purchase (AR, AP, Gen. Ledger, Invoicing)	$199
IBM AT COMPATIBLE SYSTEM 10 MHz 1 1.2MB F1, 512K, H.D. Monochrome Monitor	$1190

Options Same As Above System

COMPUTERS

COMPAQ 386	$4600
COMPAQ 286	CALL
COMPAQ PORTABLE III	CALL
IBM PC SYSTEM 2	1490
IBM XT 1 DR 256K	999
IBM XT 20MB MONO SYSTEM	1500
IBM AT MODEL 339	3900
TOSHIBA PORTABLE 1100 PLUS	LOW
TOSHIBA 3100 PLUS	LOW
LAPTOP	1090
NEC LAPTOP	1495
AST PREMIUM	CALL
SAMSUNG AT	1320
EPSON EQUITY III	LOW
APPLE MACINTOSH PLUS	1560

PRINTERS

CITIZEN 120D	$178
CITIZEN ALL MODELS	CALL
CANON LASER	1875
DIABLO	CALL
EPSON LX186	170
EPSON ALL MODELS	CALL
HP LASER JET II	1795
IBM PROPRINTER XL	579
IBM ALL MODELS	CALL
JUKI 6000	199
JUKI ALL MODELS	CALL
NEC P6/P7	434/599
NEC	LOW
OKIDATA LASER	LOW
OKIDATA ALL MODELS	CALL
PANASONIC 1080i	259
PANASONIC ALL MODELS	CALL
STAR NX 10	240
STAR ALL MODELS	CALL

PLOTTERS/DIGITIZERS

DMP 41 (HUSTON INSTRUMENTS)	$2650
DMP 51	5750
DMP 52MP 14 PEN COLOR	LOW
JDL COLOR SIZE D for AUTOCAD	1740
KURTA/SUMA GRAPHICS	CALL

DISK DRIVES

TEAC/FUJITSU ½HT	89/82
20/30/40/80MB HD	309/445/669/1099
30MB AT/60 MB AT	495/1290
10MB 10/20/50 TAPE BACKUP	LOW
IOMEGA BERNOULLI BOX 20x20	CALL
120 MEG 14 MS ACCESS	2600
786 MB HD	CALL

ALL HIGH CAPACITY DRIVES AVAILABLE

MONITORS

AMDEK 310A/480	LOW
TAXAN 640	595
SAMSUNG AMBER	83
PGS SR-12	LOW
NEC MULTISYNC	LOW
HITACHI 19" COLOR	LOW
NANAO EGA	LOW
SAMSUNG EGA	399
SONY MULTISCAN	650

CARDS

EVEREX EDGE	$230
HERCULES GRAPHIC MONO/COLOR	LOW
INTEL ABOVEBOARD AT/PS	298
PARADISE EGA	299
GENOA EGA	328
VIDEO 7 DELUXE	335
AST SIXPAK PLUS 64K/256K (EXP. to 384K)	160
AST ADVANTAGE	348
ORCHID TINY TURBO	CALL
ORCHID TURBO EGA	698
JRAM 3 LOTUS/INTEL AT	CALL
JRAM 111 AT	238
3MB EXPANSION FOR AT 0K	129
PARADISE 408	CALL

WORK STATION

Networking & Total CAD Package

COMPAQ 386 + 140MB + 60MB Tape Back Up + HP Laser Jet + DMP 5151 Plotter + 2400B Modem + 19" Hitachi Monitor + Hi Resolution Card + Terminal

CALL FOR PRICE & LEASE

MODEMS

HAYES 1200 (EXTERNAL)	$379
HAYES 1200B (INTERNAL)	297
EVEREX EVERCOM	99
HAYES 2400	597
18,000 BIT MODEM	1900

SOFTWARE

WORDPERFECT	$208
D BASE III PLUS	425
LOTUS 1-2-3 RELEASE 2	320
LOTUS SYMPHONY	420
MULTIMATE	265
MICROSOFT WORD	240
WORDSTAR 2000 PLUS	375
AUTO CAD	LOW
MICROSOFT WINDOWS	64

DESKTOP PUBLISHING

Computer. Ventura Software Laser Printer and Scanner
CALL FOR LEASE AND PURCHASE OPTIONS AND PRICES

DISKETTES

DS/DD	42¢
1.2 Floppy	1.69 each
3.5 Floppy	1.99 each

*IBM is a registered trademark of IBM International Business Machines.
Not responsible for typographic errors
Subject to stock on hand. Prices subject to change.

ADVANCE
COMPUTER SYSTEMS

3 LOCATIONS TO SERVE YOU

SUNNYVALE 665 Grape Ave.
(408) 732-6200
WALNUT CREEK 1987 N. Main St.
(415) 945-8011
SAN FRANCISCO 1231 Market St.
(415) 552-2902
inside San Franciscan Hotel main floor, Market & 8th Mezz.